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EDITORIAL

Not so long ago a good many literary critics were attacking the modern American novelist for aiming his fiction not at his reader but directly at Hollywood and—more recently—at that bigger, more colorful T-V screen shining in almost every living room in America. A strong charge—one with much truth to it, as most of us who've enjoyed the movie more than the book can testify.

But it wasn't until fairly recently—after reading a flood of manuscripts by new and established writers—that we began to see how in science fiction something analogous to the novel-scenario syndrome has begun to nibble away at us too. For the more new material we read—and the more we compare it with some of the first-rate yarns we've been uncovering in the back files—the more we begin to see where a good many modern S-F writers are *really* beginning to direct their writing: not primarily at this magazine—or at any other magazine in the field—but at those better-paying markets out there in Paperback and Hardcover Land, apparently inhabited by many readers who like science fiction but who don't seem to realize—or care—that some of the best of it appears regularly in at least half a dozen magazines specializing in the form.

Nowadays, for example—and we all certainly understand the economic problem here—when an S-F writer decides to take the time to write a full-length novel, he is usually no longer thinking exclusively of the relatively limited audience that regularly picks up the S-F magazines. No—that sale alone wouldn't help pay the grocery bills. Instead, he usually—perhaps unconsciously by now—keeps in mind what he thinks hardcover and paperback readers might want in the way of an entertaining story. And the more he thinks about it, the more he probably finds himself—once the type-writer begins clacking—staying pretty close to the traditional plots, gimmicks, and stylistic tricks that we here in the magazines have seen a thousand times before. And if sales are especially good, he soon learns a fundamental lesson about writing for the occasional reader of science fiction: that good writing and *old* ideas go much further with him than an experimental style and bold *new* ideas.

The most ironic thing of all, though, is that—given the economics of the field—far too many of these same stories *first* appear in the very magazines that shouldn't be using them—if they really want the field to move forward instead of back. But that's because fans—and editors—are still a pretty loyal bunch and can't help being curi-

(Continued on page 142)

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SUNJAMMER

BY

ARTHUR C. CLARKE

Illustrated by NODEL

THE enormous disc of sail strained at its rigging, already filled with the wind that blew between the worlds. In three minutes the race would begin, yet now John Merton felt more relaxed, more at peace, than at any time for the past year. Whatever happened when the Commodore gave the starting signal, whether *Diana* carried him to victory or defeat, he had achieved his ambition. After a lifetime spent in designing ships for others, now he would sail his own.

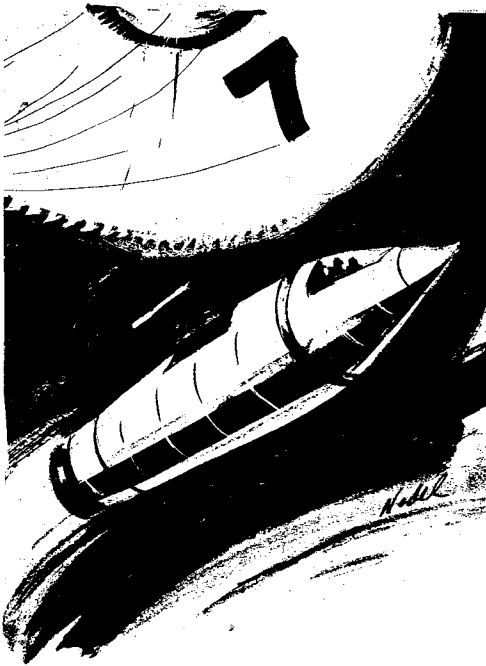
"T minus two minutes," said the cabin radio. "Please confirm your readiness."

One by one, the other skippers answered. Merton recognized all the voices—some tense, some calm—for they were the voices of his friends and rivals. On the



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*If the work of a top science-fiction writer can be said to bear a trademark, then we all know what we'd find in any story by Arthur C. Clarke (world-famous author of major novels like *Childhood's End* and *The City and the Stars*): originality—like no one else's in or out of the field. But we'd like to add two more: scientific veracity and that old-time Sense of Wonder—but expressed in a style as lucid and fresh as the Sixties. That's what we found in "Rescue Party," one of his earliest stories, and in "The Star," a theological bombshell if there ever was one. And that's what you'll find—very strongly—in "Sunjammer," which begins with a huge but fragile sun-yacht accelerating at only one thousandth of a gravity (about sixty feet in the first second) and ends with it moving at a speed far greater than that of Ikeya-Seki—the most recent comet to visit our solar system!*



four inhabited worlds, there were scarcely twenty men who could sail a sun-yacht; and they were all here, on the starting-line or aboard the escort vessels, orbiting twenty-two thousand miles above the equator.

"Number One, *Gossamer*—ready to go."

"Number Two, *Santa Maria*—all O.K."

"Number three, *Sunbeam*—O.K."

"Number Four, *Woomera*—all systems go."

Merton smiled at that last echo from the early, primitive days of astronautics. But it had become part of the tradition of space; and there were times when a man needed to evoke the shades of those who had gone before him to the stars.

"Number Five. *Lebedev*—we're ready."

"Number Six, *Arachne*—O.K."

Now it was his turn, at the end of the line; strange to think that the words he was speaking in this tiny cabin were being heard by at least five billion people.

"Number Seven, *Diana*—ready to start."

"One through Seven acknowledged." The voice from the judge's launch was impersonal. "Now T minus one minute."

Merton scarcely heard it; for the last time, he was checking the tension in the rigging. The needles of all the dynamometers were steady; the immense sail was taut, its mirror surface sparkling and glittering gloriously in the sun.

To Merton, floating weightless at the periscope, it seemed to fill the sky. As well it might—for out there were fifty million square feet of sail, linked to his capsule by almost a hundred miles of rigging. All the canvas of all the tea-clippers that had once raced like clouds across the China seas, sewn into one gigantic sheet, could not match the single sail that *Diana* had spread beneath the sun. Yet it was little more substantial than a soap-bubble; that two square miles of aluminized plastic was only a few millionths of an inch thick.

"T minus ten seconds. All recording cameras on."

Something so huge, yet so frail, was hard for the mind to grasp. And it was harder still to realize that this fragile mirror could tow them free of Earth, merely by the power of the sunlight it would trap.

". . . Five, Four, Three, Two, One, cut!"

Seven knife-blades sliced through the seven thin lines tethering the yachts to the motherships that had assembled and serviced them.

Until this moment, all had been circling Earth together in a rigidly held formation, but now the yachts would begin to disperse, like dandelion seeds drifting before the breeze. And the winner would be the one that first drifted past the Moon.

Aboard *Diana*, nothing seemed to be happening. But Merton knew better; though his body would feel no thrust, the instrument board told him he was now accelerating at almost one thousandth of a gravity. For a rocket, that figure would have been ludicrous—but this was the first time any solar yacht had attained it. *Diana's* design was sound; the vast sail was living up to his calculations. At this rate, two circuits of the Earth would build up his speed to escape velocity—then he could head out for the Moon, with the full force of the Sun behind him.

The full force of the Sun. He smiled wryly, remembering all his attempts to explain solar sailing to those lecture audiences back on Earth. That had been the only way he could raise money, in those early days. He might be Chief Designer of Cosmodyne Corporation, with a whole string of successful space-ships to his credit, but his firm had not been exactly enthusiastic about his hobby.

"Hold your hands out to the Sun," he'd said. "What do you feel? Heat, of course. But there's pressure as well—though you've never noticed it, because it's so tiny. Over the area of your hands, it only comes to about a millionth of an ounce.

"But out in space, even a pressure as small as that can be important—for it's acting all the time, hour after hour, day after day. Unlike rocket fuel, it's free and unlimited. If we want to, we can use it; we can build sails to catch the radiation blowing from the Sun."

At that point, he would pull out a few square yards of sail material and toss it towards the audience. The silvery film would coil and twist like smoke, then drift slowly to the ceiling in the hot-air currents.

"You can see how light it is," he'd continue. "A square mile weighs only a ton, and can collect five pounds of radiation

pressure. So it will start moving—and we can let it tow us along, if we attach rigging to it.

"Of course, its acceleration will be tiny—about a thousandth of a g. That doesn't seem much, but let's see what it means.

"It means that in the first second, we'll move about a fifth of an inch. I suppose a healthy snail could do better than that. But after a minute, we've covered sixty feet, and will be doing just over a mile an hour. That's not bad, for something driven by pure sunlight! After an hour, we're forty miles from our starting point, and will be moving at eighty miles an hour. Please remember that in space there's no friction, so once you start anything moving, it will keep going forever. You'll be surprised when I tell you what our thousandth-of-a-g sailingboat will be doing at the end of a day's run. *Almost two thousand miles an hour!* If it starts from orbit—as it has to, of course—it can reach escape velocity in a couple of days. And all without burning a single drop of fuel!"

Well, he'd convinced them, and in the end he'd even convinced Cosmodyne. Over the last twenty years, a new sport had come into being. It had been called the sport of billionaires, and that was true—but it was beginning to pay for itself in terms of publicity and television cover-

age. The prestige of four continents and two worlds was riding on this race, and it had the biggest audience in history.

Diana had made a good start; time to take a look at the opposition. Moving very gently. Though there were shock absorbers between the control capsule and the delicate rigging, he was determined to run no risks. Merton stationed himself at the periscope.

There they were, looking like strange silver flowers planted in the dark fields of space. The nearest, South America's *Santa Maria*, was only fifty miles away; it bore a resemblance to a boy's kite—but a kite more than a mile on its side. Farther away, the University of Astrograd's *Tobedev* looked like a Maltese cross; the sails that formed the four arms could apparently be tilted for steering purposes. In contrast, the Federation of Australasia's *Woomera* was a simple parachute, four miles in circumference. General Spacecraft's *Arachne*, as its name suggested, looked like a spider-web—and had been built on the same principles, by robot shuttles spiralling out from a central point. Eurospace Corporation's *Gossamer* was an identical design, on a slightly smaller scale. And the Republic of Mars' *Sunbeam* was a flat ring, with

a half-mile-wide hole in the centre, spinning slowly so that centrifugal force gave it stiffness. That was an old idea, but no one had ever made it work. Merton was fairly sure that the colonials would be in trouble when they started to turn.

That would not be for another six hours, when the yachts had moved along the first quarter of their slow and stately twenty-four hour orbit. Here at the beginning of the race, they were all heading directly away from the Sun—running, as it were, before the solar wind. One had to make the most of this lap, before the boats swung round to the other side of Earth and then started to head back into the Sun.

Time for the first check, Merton told himself, while he had no navigational worries. With the periscope, he made a careful examination of the sail, concentrating on the points where the rigging was attached to it. The shroud-lines—narrow bands of unsilvered plastic film—would have been completely invisible had they not been coated with fluorescent paint. Now they were taut lines of coloured light, dwindling away for hundreds of yards towards that gigantic sail. Each had its own electric windlass, not much bigger than a game-fisherman's reel. The little windlasses were continually turning, playing lines in or out, as

the autopilot kept the sail trimmed at the correct angle to the Sun.

The play of sunlight on the great flexible mirror was beautiful to watch. It was undulating in slow, stately oscillations, sending multiple images of the Sun marching across the heavens, until they faded away at the edges of the sail. Such leisurely vibrations were to be expected in this vast and flimsy structure; they were usually quite harmless, but Merton watched them carefully. Sometimes they could build up to the catastrophic undulations known as the wriggles, which could tear a sail to pieces.

When he was satisfied that everything was shipshape, he swept the periscope around the sky, rechecking the positions of his rivals. It was as he had hoped; the weeding-out process had begun, as the less efficient boats fell astern. But the real test would come when they passed into the shadow of the Earth; then maneuverability would count as much as speed.

It seemed a strange thing to do, now that the race had just started, but it might be a good idea to get some sleep. The two man crews on the other boats could take it in turns, but Merton had no one to relieve him. He must rely on his physical resources—like that other solitary seaman Joshua Slocum, in his

tiny *Spray*. The American skipper had sailed *Spray* single-handed round the world; he could never have dreamt that, two centuries later, a man would be sailing single-handed from Earth to Moon—inspired, at least partly, by his example.

Merton snapped the elastic bands of the cabin seat around his waist and legs, then placed the electrodes of the sleep-inducer on his forehead. He set the timer for three hours, and relaxed.

Very gently, hypnotically, the electronic pulses throbbed in the frontal lobes of his brain. Coloured spirals of light expanded beneath his closed eyelids, widening outwards to infinity. Then—nothing. . . .

The brazen clamour of the alarm dragged him back from his dreamless sleep. He was instantly awake, his eyes scanning the instrument panel. Only two hours had passed—but above the accelerometer, a red light was flashing. Thrust was falling; *Diana* was losing power.

Merton's first thought was that something had happened to the sail; perhaps the antispin devices had failed, and the rigging had become twisted. Swiftly, he checked the meters that showed the tension in the shroud-lines. Strange, on one side of the sail they were reading normally—but

on the other, the pull was dropping slowly even as he watched.

In sudden understanding, Merton grabbed the periscope, switched to wide-angle vision, and started to scan the edge of the sail. Yes—there was the trouble, and it could have only one cause.

A huge, sharp-edged shadow had begun to slide across the gleaming silver of the sail. Darkness was falling upon *Diana*, as if a cloud had passed between her and the Sun. And in the dark, robbed of the rays that drove her, she would lose all thrust and drift helplessly through space.

But, of course, there were no clouds here, more than twenty

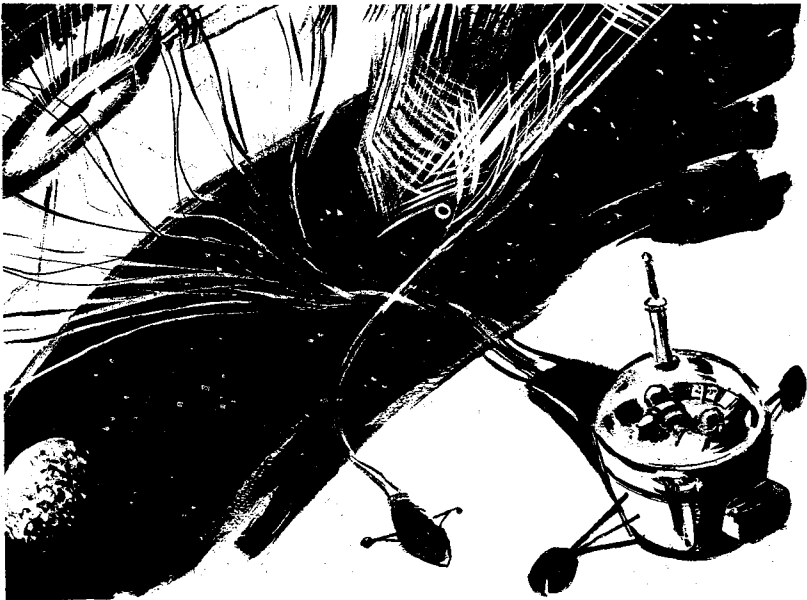
thousand miles above Earth. If there was a shadow, it must be made by man.

Merton grinned as he swung the periscope towards the Sun, switching in the filters that would allow him to look full into its blazing face without being blinded.

"Maneuver 4a," he muttered to himself. "We'll see who can play best at *that* game."

It looked as if a giant planet was crossing the face of the Sun. A great black disc had bitten deep into its edge. Twenty miles astern, *Gossamer* was trying to arrange an artificial eclipse—specially for *Diana's* benefit.

The maneuver was a perfectly legitimate one; back in the days



of ocean racing, skippers had often tried to rob each other of the wind. With any luck, you could leave your rival becalmed, with his sails collapsing around him—and be well ahead before he could undo the damage.

Merton had no intention of being caught so easily. There was plenty of time to take evasive action; things happened very slowly, when you were running a solar sailingboat. It would be at least twenty minutes before *Gossamer* could slide completely across the face of the Sun, and leave him in darkness.

Diana's tiny computer—the size of a matchbox, but the equivalent of a thousand human mathematicians—considered the problem for a full second and then flashed the answer. He'd have to open control panels three and four, until the sail had developed an extra twenty degrees of tilt; then the radiation pressure would blow him out of *Gossamer's* dangerous shadow, back into the full blast of the Sun. It was a pity to interfere with the auto-pilot, which had been carefully programmed to give the fastest possible run—but that, after all, was why he was here. This was what made solar yachting a sport, rather than a battle between computers.

Out went control lines one to six, slowly undulating like sleepy snakes as they momentarily lost

their tension. Two miles away, the triangular panels began to open lazily, spilling sunlight through the sail. Yet, for a long time, nothing seemed to happen. It was hard to grow accustomed to this slow motion world, where it took minutes for the effects of any action to become visible to the eye. Then Merton saw that the sail was indeed tipping towards the Sun—and that *Gossamer's* shadow was sliding harmlessly away, its cone of darkness lost in the deeper night of space.

Long before the shadow had vanished, and the disc of the Sun had cleared again, he reversed the tilt and brought *Diana* back on course. Her new momentum would carry her clear of the danger; no need to overdo it, and upset his calculations by side-stepping too far. That was another rule that was hard to learn. The very moment you had started something happening in space, it was already time to think about stopping it.

He reset the alarm, ready for the next natural or man-made emergency; perhaps *Gossamer*, or one of the other contestants, would try the same trick again. Meanwhile, it was time to eat, though he did not feel particularly hungry. One used little physical energy in space, and it was easy to forget about food. Easy—and dangerous; for when an emergency arose, you might

not have the reserves needed to deal with it.

He broke open the first of the meal packets, and inspected it without enthusiasm. The name on the label—SPACETASTIES—was enough to put him off. And he had grave doubts about the promise printed underneath. Guaranteed Crumbless. It had been said that crumbs were a greater danger to space vehicles than meteorites. They could drift into the most unlikely places, causing short circuits, blocking vital jets and getting into instruments that were supposed to be hermetically sealed.

Still, the liverwurst went down pleasantly enough; so did the chocolate and the pineapple puree. The plastic coffee-bulb was warming on the electric heater when the outside world broke in on his solitude. The radio operator on the Commodore's launch routed a call to him.

"Dr. Merton? If you can spare the time, Jeremy Blair would like a few words with you." Blair was one of the more responsible news commentators, and Merton had been on his program many times. He could refuse to be interviewed, of course, but he liked Blair, and at the moment he could certainly not claim to be too busy. "I'll take it," he answered.

"Hello, Dr. Merton," said the commentator immediately. "Glad

you can spare a few minutes. And congratulations—you seem to be ahead of the field."

"Too early in the game to be sure of that," Merton answered cautiously.

"Tell me, doctor—why did you decide to sail *Diana* yourself?" Just because it's never been done before?"

"Well, isn't that a very good reason? But it wasn't the only one, of course." He paused, choosing his words carefully. "You know how critically the performance of a sun-yacht depends on its mass. A second man, with all his supplies, would mean another five hundred pounds.

That could easily be the difference between winning and losing."

"And you're quite certain that you can handle *Diana* alone?"

"Reasonably sure, thanks to the automatic controls I've designed. My main job is to supervise and make decisions."

"But—two square miles of sail! It just doesn't seem possible for one man to cope with all that!"

Merton laughed.

"Why not? Those two square miles produce a maximum pull of just ten pounds. I can exert more force with my little finger."

"Well, thank you, doctor. And good luck."

As the commentator signed off, Merton felt a little ashamed of himself. For his answer had been

only part of the truth; and he was sure that Blair was shrewd enough to know it.

There was just one reason why he was here, alone in space. For almost forty years he had worked with teams of hundreds or even thousands of men, helping to design the most complex vehicles that the world had ever seen. For the last twenty years he had led one of those teams, and watched his creations go soaring to the stars. (But there were failures that he could never forget, even though the fault had not been his.) He was famous, with a successful career behind him. Yet he had never done anything by himself; always he had been one of an army.

This was his very last chance of individual achievement, and he would share it with no one. There would be no more solar yachting for at least five years, as the period of the quiet Sun ended and the cycle of bad weather began, with radiation storms bursting through the Solar System. When it was safe again for these frail, unshielded craft to venture aloft, he would be too old. If, indeed, he was not too old already. . . .

He dropped the empty food containers into the waste disposal, and turned once more to the periscope. At first, he could find only five of the other yachts; there was no sign of *Woomera*.

It took him several minutes to locate her—a dim, star-eclipsing phantom, neatly caught in the shadow of *Lebedev*. He could imagine the frantic efforts the Australasians were making to extricate themselves, and wondered how they had fallen into the trap. It suggested that *Lebedev* was unusually maneuverable; she would bear watching, though she was too far away to menace *Diana* at the moment.

Now the Earth had almost vanished. It had waned to a narrow, brilliant bow of light that was moving steadily towards the Sun. Dimly outlined within that burning bow was the night side of the planet, with the phosphorescent gleams of great cities showing here and there through gaps in the clouds. The disc of darkness had already blanked out a huge section of the Milky Way; in a few minutes, it would start to encroach upon the Sun.

The light was fading. A purple, twilight hue—the glow of many sunsets, thousands of miles below—was falling across the sail, as *Diana* slipped silently into the shadow of Earth. The Sun plummeted below that invisible horizon. Within minutes, it was night.

Merton looked back along the orbit he had traced now a quarter of the way around the world. One by one he saw the brilliant stars of the other yachts wink out, as

they joined him in the brief night. It would be an hour before the Sun emerged from that enormous black shield, and through all that time they would be completely helpless, coasting without power.

He switched on the external spotlight, and started to search the now darkened sail with its beam. Already, the thousands of acres of film were beginning to wrinkle and become flaccid; the shroud-lines were slackening, and must be wound in lest they become entangled. But all this was expected; everything was going as planned.

Forty miles astern, *Arachne* and *Santa Maria* were not so lucky. Merton learnt of their troubles when the radio burst into life on the emergency circuit.

"Number Two, Number Six—this is Control. You are on a collision course. Your orbits will intersect in sixty-five minutes! Do you require assistance?"

There was a long pause while the two skippers digested this bad news. Merton wondered who was to blame; perhaps one yacht had been trying to shadow the other, and had not completed the maneuver before they were both caught in darkness. Now there was nothing that either could do; they were slowly but inexorably converging together, unable to change course by a fraction of a degree.

Yet, sixty-five minutes! That would just bring them out into sunlight again, as they emerged from the shadow of the Earth. They still had a slim chance, if their sails could snatch enough power to avoid a crash. There must be some frantic calculations going on, aboard *Arachne* and *Santa Maria*.

Arachne answered first; her reply was just what Merton had expected.

"Number Six calling Control. We don't need assistance, thank you. We'll work this out for ourselves."

I wonder, thought Merton. But at least it will be interesting to watch. The first real drama of the race was approaching—exactly above the line of midnight on the sleeping Earth.

For the next hour, Merton's own sail kept him too busy to worry about *Arachne* and *Santa Maria*. It was hard to keep a good watch on that fifty million square feet of dim plastic out there in the darkness, illuminated only by his narrow spotlight and the rays of the still distant Moon. From now on, for almost half his orbit round the Earth, he must keep the whole of this immense area edge-on to the Sun. During the next twelve or fourteen hours, the sail would be a useless encumbrance; for he would be heading into the Sun, and its rays could only drive him

backwards along his orbit. It was a pity that he could not furl the sail completely, until he was ready to use it again. But no one had yet found a practical way of doing this.

Far below, there was the first hint of dawn along the edge of the Earth. In ten minutes, the Sun would emerge from its eclipse; the coasting yachts would come to life again as the blast of radiation struck their sails. That would be the moment of crisis for *Arachne* and *Santa Maria*—and, indeed for all of them.

Merton swung the periscope until he found the two dark shadows drifting against the stars. They were very close together—perhaps less than three miles apart. They might, he decided, just be able to make it. . . .

Dawn flashed like an explosion along the rim of Earth, as the Sun rose out of the Pacific. The sail and shroud-lines glowed a brief crimson, then gold, then blazed with the pure white light of day. The needles of the dynamometers began to lift from their zeros—but only just. *Diana* was still almost completely weightless, for with the sail pointing towards the Sun, her acceleration was now only a few millionths of a gravity.

But *Arachne* and *Santa Maria* were crowding on all the sail

they could manage, in their desperate attempt to keep apart. Now, while there was less than two miles between them, their glittering plastic clouds were unfurling and expanding with agonizing slowness, as they felt the first delicate push of the Sun's rays. Almost every TV screen on Earth would be mirroring this protracted drama; and even now, at this very last minute, it was impossible to tell what the outcome would be.

The two skippers were stubborn men. Either could have cut his sail, and fallen back to give the other a chance; but neither would do so. Too much prestige, too many millions, too many reputations, were at stake. And so, silently and softly as snowflakes falling on a winter night, *Arachne* and *Santa Maria* collided.

The square kite crawled almost imperceptibly into the circular spider's-web; the long ribbons of the shroud-lines twisted and tangled together with dreamlike slowness. Even aboard *Diana*, busy with his own rigging, Merton could scarcely tear his eye away from this silent, long drawn out disaster.

For more than ten minutes the billowing, shining clouds continued to merge into one inextricable mass. Then the crew capsules tore loose and went their separate ways, missing each

other by hundreds of yards. With a flare of rockets, the safety launches hurried to pick them up.

That leaves five of us, thought Merton. He felt sorry for the skippers who had so thoroughly eliminated each other, only a few hours after the start of the race; but they were young men, and would have another chance.

Within minutes, the five had dropped to four. From the very beginning, Merton had had doubts about the slowly rotating *Sunbeam*. Now he saw them justified.

The Martian ship had failed to tack properly; her spin had given her too much stability. Her great ring of a sail was turning to face the Sun, instead of being edge-on to it. She was being blown back along her course at almost her maximum acceleration.

That was about the most maddening thing that could happen to a skipper—worse even than a collision, for he could blame only himself. But no one would feel much sympathy for the frustrated colonials, as they dwindled slowly astern. They had made too many brash boasts before the race, and what had happened to them was poetic justice.

Yet it would not do to write off *Sunbeam* completely. With almost half a million miles still to go, she might still pull ahead. Indeed, if there were a few more

casualties, she might be the only one to complete the race. It had happened before.

However, the next twelve hours were uneventful, as the Earth waxed in the sky from new to full. There was little to do while the fleet drifted round the unpowered half of its orbit, but Merton did not find the time hanging heavily on his hands. He caught a few hours sleep, ate two meals, wrote up his log, and became involved in several more radio interviews. Sometimes, though rarely, he talked to the other skippers, exchanging greetings and friendly taunts. But most of the time he was content to float in weightless relaxation, beyond all the cares of Earth, happier than he had been for many years. He was—as far as any man could be in space—master of his own fate, sailing the ship upon which he had lavished so much skill, so much love, that she had become part of his very being.

The next casualty came when they were passing the line between Earth and Sun, and were just beginning the powered half of the orbit. Aboard *Diana*, Merton saw the great sail stiffen as it tilted to catch the rays that drove it. The acceleration began to climb up from the microgravities, though it would be hours yet before it would reach its maximum value.

It would never reach it for *Gossamer*. The moment when power came on again was always critical, and she failed to survive it.

Blair's radio commentary, which Merton had left running at low volume, alerted him with the news: "Hullo, *Gossamer* has the wriggles!" He hurried to the periscope, but at first could see nothing wrong with the great circular disc of *Gossamer's* sail. It was difficult to study it, as it was almost edge-on to him and so appeared as a thin ellipse; but presently he saw that it was twisting back and forth in slow, irresistible oscillations. Unless the crew could damp out these waves, by properly timed but gentle tugs on the shroud-lines, the sail would tear itself to pieces.

They did their best, and after twenty minutes it seemed that they had succeeded. Then, somewhere near the center of the sail, the plastic film began to rip. It was slowly driven outwards by the radiation pressure, like smoke coiling upwards from a fire. Within a quarter of an hour, nothing was left but the delicate tracery of the radial spars that had supported the great web. Once again there was a flare of rockets, as a launch moved in to retrieve the *Gossamer's* capsule and her dejected crew.

"Getting rather lonely up here,

isn't it?" said a conversational voice over the ship-to-ship radio.

"Not for you, Dimitri," retorted Merton. "You've still got company back there at the end of the field. I'm the one who's lonely, up here in front." It was not an idle boast. By this time *Diana* was three hundred miles ahead of the next competitor, and his lead should increase still more rapidly in the hours to come.

Aboard *Lebedev*, Dimitri Markoff gave a good-natured chuckle. He did not sound, Merton thought, at all like a man who had resigned himself to defeat.

"Remember the legend of the tortoise and the hare," answered the Russian. "A lot can happen in the next quarter-million miles."

It happened much sooner than that, when they had completed their first orbit of Earth and were passing the starting line again—though thousands of miles higher, thanks to the extra energy the Sun's rays had given them. Merton had taken careful sights on the other yachts, and had fed the figures into the computer. The answer it gave for *Woomera* was so absurd that he immediately did a recheck.

There was no doubt of it—the Australasians were catching up at a fantastic rate. No solar yacht could possibly have such an acceleration, unless—

A swift look through the periscope gave the answer. *Woomera's* rigging, pared back to the very minimum of mass, had given way. It was her sail alone, still maintaining its shape, that was racing up behind him like a handkerchief blown before the wind. Two hours later it fluttered past, less than twenty miles away. But long before that, the Australasians had joined the growing crowd aboard the Commodore's launch.

So now it was a straight fight between *Diana* and *Lebedev*—for though the Martians had not given up, they were a thousand miles astern and no longer counted as a serious threat. For that matter, it was hard to see what *Lebedev* could do to overtake *Diana's* lead. But all the way round the second lap—through eclipse again, and the long, slow drift against the Sun, Merton felt a growing unease.

He knew the Russian pilots and designers. They had been trying to win this race for twenty years and after all, it was only fair that they should, for had not Pyotr Nikolayevich Lebedev been the first man to detect the pressure of sunlight, back at the very beginning of the Twentieth Century? But they had never succeeded.

And they would never stop trying. Dimitri was up to some thing—and it would be spectacular.

Aboard the official launch, a thousand miles behind the racing yachts, Commodore van Stratten looked at the radiogram with angry dismay. It had travelled more than a hundred million miles, from the chain of solar observatories swinging high above the blazing surface of the Sun, and it brought the worst possible news.

The Commodore—his title, of course, was purely honorary—back on Earth he was Professor of Astrophysics at Harvard—had been half expecting it. Never before had the race been arranged so late in the season; there had been many delays, they had gambled and now, it seemed they might all lose.

Deep beneath the surface of the Sun, enormous forces were gathering. At any moment, the energies of a million hydrogen bombs might burst forth in the awesome explosion known as a solar flare. Climbing at millions of miles an hour, an invisible fireball many times the size of Earth would leap from the Sun, and head out across space.

The cloud of electrified gas would probably miss the Earth completely. But if it did not, it would arrive in just over a day. Spaceships could protect themselves, with their shielding and their powerful magnetic screen. But the lightly-built solar yachts, with their paper-thin



walls, were defenseless against such a menace. The crews would have to be taken off, and the race abandoned.

John Merton still knew nothing of this as he brought *Diana* round the Earth for the second time. If all went well, this would be the last circuit, both for him and for Russians. They had spiralled upwards by thousands of miles, gaining energy from the Sun's rays. On this lap, they should escape from Earth completely—and head outwards on the long run to the Moon. It was a straight race now. *Sunbeam's* crew had finally withdrawn, exhausted, after battling valiantly with their spinning sail

for more than a hundred thousand miles.

Merton did not feel tired; he had eaten and slept well, and *Diana* was behaving herself admirably. The autopilot, tensioning the rigging like a busy little spider, kept the great sail trimmed to the Sun more accurately than any humanskipper. Though by this time, the two square miles of plastic sheet must have been riddled by hundreds of micrometeorites, the pinhead-sized punctures had produced no falling off to thrust.

He had only two worries. The first was shroud-line Number eight, which could no longer be adjusted properly. Without any

warning, the reel had jammed; even after all these years of astronautical engineering, bearings sometimes seized up in vacuum. He could neither lengthen nor shorten the line, and would have to navigate as best he could with the others. Luckily, the most difficult maneuvers were over. From now on, *Diana* would have the Sun behind her as she sailed straight down the solar wind. And as the old-time sailors often said, it was easy to handle a boat when the wind was blowing over your shoulder.

His other worry was *Lebedev*, still dogging his heels three hundred miles astern. The Russian yacht had shown remarkable maneuverability, thanks to the four great panels that could be tilted around the central sail. All her flip-overs as she rounded Earth had been carried out with superb precision; but to gain maneuverability she must have sacrificed speed. You could not have it both ways. In the long, straight haul ahead, Merton should be able to hold his own. Yet he could not be certain of victory until, three or four days from now, *Diana* went flashing past the far side of the Moon.

And then, in the fiftieth hour of the race, near the end of the second orbit around Earth, Markoff sprang his little surprise.

"Hello, John," he said casually, over the ship-to-ship circuit. "I'd

like you to watch this. It should be interesting."

Merton drew himself across to the periscope and turned up the magnification to the limit. There in the field of view, a most improbable sight against the background of the stars, was the glittering Maltese cross of *Lebedev*, very small but very clear. And then, as he watched, the four arms of the cross slowly detached themselves from the central square and went drifting away, with all their spars and rigging, into space.

Markoff had jettisoned all unnecessary mass, now that he was coming up to escape velocity and need no longer plod patiently around the Earth, gaining momentum on each circuit. From now on, *Lebedev* would be almost unsteerable—but that did not matter. All the tricky navigation lay behind her. It was as if an old-time yachtsman had deliberately thrown away his rudder and heavy keel—knowing that the rest of the race would be straight downwind over a calm sea.

"Congratulations, Dimitri," Merton radioed. "It's a neat trick. But it's not good enough—you can't catch up now."

"I've not finished yet," the Russian answered. "There's an old winter's tale in my country, about a sleigh being chased by wolves. To save himself, the

driver has to throw off the passengers one by one. Do you see the analogy?"

Merton did, all too well. On this final straight lap, Dimitri no longer needed his co-pilot. *Lebedev* could really be stripped down for action.

"Alexis won't be very happy about this," Merton replied. "Besides, it's against the rules."

"Alexis isn't happy, but I'm the captain. He'll just have to wait around for ten minutes until the Commodore picks him up. And the regulations say nothing about the size of the crew—you should know that."

Merton did not answer. He was too busy doing some hurried calculations, based on what he knew of *Lebedev's* design. By the time he had finished, he knew that the race was still in doubt. *Lebedev* would be catching up with him at just about the time he hoped to pass the Moon.

But the outcome of the race was already being decided, ninety-two million miles away.

On Solar Observatory Three, far inside the orbit of Mercury, the automatic instruments recorded the whole history of the flare. A hundred million square miles of the Sun's surface suddenly exploded in such blue-white fury that, by comparison the rest of the disc paled to a

dull glow. Out of that seething inferno, twisting and turning like a living creature in the magnetic fields of its own creation, soared the electrified plasma of the great flare. Ahead of it, moving at the speed of light, went the warning flash of ultra-violet and X-rays. That would reach Earth in eight minutes, and was relatively harmless. Not so the charged atoms that were following behind at their leisurely four million miles an hour—and which, in just over a day, would engulf *Diana*, *Lebedev*, and their accompanying little fleet in a cloud of lethal radiation.

The Commodore left his decision to the last possible minute. Even when the jet of plasma had been tracked past the orbit of Venus, there was a chance that it might miss the Earth. But when it was less than four hours away, and had already been picked up by the Moon-based radar network, he knew that there was no hope. All solar sailing was over for the next five or six years until the Sun was quiet again.

A great sigh of disappointment swept across the Solar System. *Diana* and *Lebedev* were halfway between Earth and Moon, running neck and neck—and now no one would ever know which was the better boat. The enthusiasts would argue the result for years; history would merely re-

cord: Race cancelled owing to solar storm.

When John Merton received the order, he felt a bitterness he had not known since childhood. Across the years, sharp and clear, came the memory of his tenth birthday. He had been promised an exact scale model of the famous spaceship *Morning Star*, and for weeks had been planning how he would assemble it, where he would hang it up in his bedroom. And then, at the last moment, his father had broken the news. "I'm sorry, John—it costs too much money. Maybe next year. . . ."

Half a century and a successful lifetime later, he was a heart-broken boy again.

For a moment, he thought of disobeying the Commodore. Suppose he sailed on, ignoring the warning? Even if the race were abandoned, he could make a crossing to the Moon that would stand in the record books for generations.

But that would be worse than stupidity. It would be suicide—and a very unpleasant form of suicide. He had seen men die of radiation poisoning, when the magnetic shielding of their ships had failed in deep space. Nothing was worth that. . . .

He felt sorry for Dimitri Markoff as for himself; they both deserved to win, and now victory would go to neither. No man

could argue with the Sun in one of its rages, even though he might ride upon its beams to the edge of space.

Only fifty miles astern now, the Commodore's launch was drawing alongside *Lebedev*, preparing to take off her skipper. There went the silver sail, as Dimitri—with feeling that he would share—cut the rigging. The tiny capsule would be taken back to Earth, perhaps to be used again—but a sail was spread for one voyage only.

He could press the jettison button now, and save his rescuers a few minutes of time. But he could not do so. He wanted to stay aboard to the very end, on the little boat that had been for so long a part of his dreams and his life. The great sail was spread now at right angles to the Sun, exerting its utmost thrust. Long ago it had torn him clear of Earth—and *Diana* was still gaining speed.

Then, out of nowhere, beyond all doubt or hesitation, he knew what must be done. For the last time, he sat down before the computer that had navigated him halfway to the Moon.

When he had finished, he packed the log and his few personal belongings. Clumsily—for he was out of practice, and it was not an easy job to do by oneself—he climbed into the emergency survival suit.

He was just sealing the helmet when the Commodore's voice called over the radio. "We'll be alongside in five minutes, Captain. Please cut your sail so we won't foul it."

John Merton, first and last skipper of the sun-yacht *Diana*, hesitated for a moment. He looked for the last time round the tiny cabin, with its shining instruments and its neatly arranged controls, now all locked in their final positions. Then he said to the microphone: "I'm abandoning ship. Take your time to pick me up. *Diana* can look after herself."

There was no reply from the Commodore, and for that he was grateful. Professor van Stratten would have guessed what was happening—and would know that, in these final moments, he wished to be left alone.

He did not bother to exhaust the airlock, and the rush of escaping gas blew him gently out into space; the thrust he gave her then was his last gift to *Diana*. She dwindled away from him, sail glittering splendidly in the sunlight that would be hers for centuries to come. Two days from now she would flash past the Moon; but the Moon, like the Earth, could never catch her. Without his mass to slow her down, she would gain two thousand miles an hour in every day of sailing. In a month, she would

be travelling faster than any ship that man had ever built.

As the Sun's rays weakened with distance, so her acceleration would fall. But even at the orbit of Mars, she would be gaining a thousand miles an hour in every day. Long before then, she would be moving too swiftly for the Sun itself to hold her. Faster than any comet that had ever streaked in from the stars, she would be heading out into the abyss.

The glare of rockets, only a few miles away, caught Merton's eye. The launch was approaching to pick him up at thousands of times the acceleration that *Diana* could ever attain. But engines could burn for a few minutes only, before they exhausted their fuel—while *Diana* would still be gaining speed, driven outwards by the Sun's eternal fires, for ages yet to come.

"Good-bye, little ship," said John Merton. "I wonder what eyes will see you next, how many thousand years from now?"

At last he felt at peace, as the blunt torpedo of the launch nosed up beside him. He would never win the race to the Moon; but his would be the first of all man's ships to set sail on the long journey to the stars.

THE END

SUNJAMMER

25



For Each Man Kills

Just after the last World War, science-fiction readers were practically deluged • by a spate of post-nuclear-war stories that soon killed each other off by sheer repetition of theme. Today, of course, most of them seem unnecessarily pessimistic even though we have yet to solve the problem posed by the Bomb—still there and bigger than ever. Some of those yarns, though, continue to shine as brightly now as they did then—among them the brilliantly extrapolative “Baldy” series by Lewis Padgett and Judith Merril’s biting miniature “That Only a Mother.” But the one that has haunted us all these years is William F. Temple’s quietly understated “For Each Man Kills,” in which the central character finds himself—because of an atomic pile that leaked neutrons like a sieve—in love with two women who legitimately end up falling in love with each other!

WILLIAM F. TEMPLE

Illustrated by SUMMERS



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FOR EACH MAN KILLS

27

SHE WAS different from most women, but one thing she had in common with all women: she knew that to keep a man waiting increased his desire for the sight of her.

Ellen had called from the bedroom: "Make yourself at home, Russ. I've not finished dressing. The U.235 report is on the tableI'll be out in ten minutes."

The ten minutes became twenty, and Russ hadn't glanced at the report. He'd wandered moodily about the room looking at pictures of Ellen. The portrait in oils in the alcove. Sloman had got something of Ellen, something of the Gioconda smile, but as a whole of course it hadn't come off. Da Vinci himself couldn't have put all of Ellen on canvas. Not on one canvas. He'd have to fill a gallery with angles on her, and then, inevitably, there would still be something—an important something—that the mesh had been too coarse to hold.

Sloman was no Da Vinci, but he was good. The best of the bunch in Pinetown. He'd have to remember to suggest Sloman's name to the Mayor for presidency of the Academy. When they'd put the roof back on it....

There was a miniature of Ellen, also by Sloman. He didn't like it much. The classic features were too classic. The pale blue eyes were not regarding you or any-

thing in this world—what was left of it. It was that detached, silent mood, when Ellen gave her attention to other things than you and vouchsafed nothing about them. And you suspected they were of more importance than you. Which was disquieting if you loved her as Russell Howard did, with a fretting eagerness to possess.

There were three mirrors in the room. He inspected himself carefully in each. He was still young-looking but the lines of responsibility were beginning to show.

Three mirrors? The ration in Pinetown was one per apartment, and you had to be a 60-hour a week worker at that. He must sound Ellen about it. The glass-works was going well now, but the silvering bottleneck....

The hell with it. He'd come here to forget work. He wasn't Atlas. Why did he keep trying to be?

There were fourteen photos of Ellen about the room. He counted them. They ranged from snaps to cabinets. The bulk of them pre-war. There were few chemicals to spare these days for purely personal photographs. 93 per cent of such chemicals were reserved for technical photography. About bromide: couldn't it be produced by...?

He shrugged the world from his shoulders again with an effort.

Come on, Ellen, he thought,

come and take me out of myself. Talk about Beethoven's last quartets, and the peak novels of Mauriac, the omniscience of Balzac, the insight of Cezanne. And Siena and Amalfi and Bruges and Granada, and all those other wonderful faraway places you saw and whose beauty may now be dust for all anyone knows.

Why do I always have to come to you? Why don't you come to the office sometimes, talk with me, and revive my faith in the vision I'm trying to build out of this ashcan—this Pinetown that never had beauty even before the rockets hit it?

His hand closed on the Palm Beach snap of Ellen and slipped it into his inner pocket. As he re-arranged the photos to cover the gap, he thought: that's one way I can carry you around with me. He liked that snap particularly. Ellen would never give him a photo of her. It was another odd side to her.

The bedroom door opened and she came out. He realized at once that no photo could ever remotely compensate for her physical absence. That strange and exciting contrast of light blue eyes and raven-black hair....

"What's the program?" she asked.

"Well," he said, hesitantly, "Jed's concert is postponed—he's ill. And the movie house is shut: run out of carbons. Anyway,

we've seen all their films six times. Perhaps we could just sit here and talk?"

She looked around the room. "I'd like a change of scenery. I'm tired of looking at me. Let's walk."

"Not much change of scenery possible that way either," he said. "Still—O.K."

They picked their way down the main street. The bigger holes had been filled in, but there were still enough small ones to twist your ankle unless you were careful. Russ frowned. "I most get on to Hawkins. Seems to me his labor squads are spending more time in the park than on main street. These pot-holes—"

"You should be glad to see them," she said. "Only two years ago this street was twenty feet deep in debris, all the way. Hawkins' men moved mountains. Look, Russ, let's forget it for awhile."

"Forget it!" he exclaimed. "I wish I could. But you can't escape it. Everywhere you look there's work screaming to be done. This town was half a century growing. It died in one night. We're trying to rebuild it on a shoestring—with shoestrings. No gasoline, no coal, little timber, only salvaged rubber—name any raw material you like, and we either haven't got it or there's just enough to wear on your finger."

She knew it all, she'd heard it all. But she also knew he'd come to her to be praised and soothed. She squeezed his arm sympathetically. "There's no shortage of enthusiasm," she said. "The Mayor and you have seen to that."

"It was the Mayor," he said. "Without him we'd still be sitting on the rubble chewing our nails—and that's all we'd have to chew. He knew what to go for first: crops. He's organized everything since: labor squads, opening up the roads, patching up living quarters, rationing, the newspapers—we're even thinking about culture again. Before we're dead, we may have a city that's a work of art."

They were nearing a lone Gothic arch. It was both the sole relic and the tombstone of the Protestant church. It could have been symbolic of anything, futility or the indestructibility of design, a monument to the betrayal of a religion or a sign still indicating the way. The low red sun threw a gaunt shadow of it across the new-laid turf of the park. And suddenly the relief of a decision came to him. This was the place, this was the time.

He steered Ellen to a seat of yellow brick. Her hand was still on his arm, and he regarded it as he spoke.

"Ellen, I want you to marry me. I don't know how you feel

about it. We've chummed around, I guess, because we've certain interests in common. Because sometimes one gets tired of talking about the weather, and work, and how it was in the old days. But lately I've not been able to get you out of my mind. You're getting between me and everything. I've got to needing you somewhere near. Once, twice a week isn't enough. The waiting is hell. I want you to live with me. What do you say?"

It was odd. He had said this twenty times in his imagination with passion. When it came to it, it was like someone else speaking. A quiet, impersonal voice. His attention seemed more upon the attention of her hand than on her reply. It was a slim, delicate hand. The nails scrupulously clean, shining, with little flecks of white on them. They meant pleasant surprises, someone had told him long ago.

Then the hand was withdrawn from him, became a support for its owner's chin as she gazed abstractedly across the park at the flat desert.

"Russ, you'd better know," she said, slowly. "I've sopped up all I can find of atomic theory. Now I want to put it to use. I've applied to work on the pile. The application was granted."

He stared at her.

"You're taking a hellish risk. It's stuck together with stamp-

paper. It leaks neutrons like a sieve leaks water. I'd much rather you keep away from it until we've learned more about it."

"The only way we can learn more about it is by practical experiment, trial and error. And hope we don't make one error too many. As you know, the literature we've managed to scrape together about atomic physics could be tucked under one arm. If we're ever going to get this town looking like a town again, if we're going to have some degree of civilization, and if we ever hope to reach the world outside, we've got to have power. There's no other hope but the pile."

He gloomed, then answered reluctantly: "All right, Ellen. But be careful. I don't want you fading away....I'm still waiting for an answer."

"Oh, Russ, don't you understand? I've given you the answer. You remember what happened to Lillian Webb, who was the only woman who worked on the pile?"

Russell Howard went rigid. He paled slowly.

"Do you mean, that might happen to you?" He had difficulty in speaking. The hinges of his jaws were stiff.

"It's very likely. It could be termed an occupational disease."

He gripped her by the elbows, swung her round to face him. "Now, listen to me," he said,

grimly and deliberately: "You're not—"

"Let me go," she said, very quietly. He could feel that her body had gone as tense as his. All friendliness had left her. She stared at him with eyes that had become wide and ice-blue. Slowly, he took his hands from her. He had known of this side of her character, but this was the first time it had been directed towards him.

"You're not the Mayor yet," she said. "Until you are, you have no authority to tell me what I shall or shan't do. Remember that."

He, who daily ordered the lives of half the town, felt like a reprimanded schoolboy. Instinctively, he covered it with anger.

"You'd better remember yourself you've a duty to the community. We've far too few women, and far too many of those have been barren by radiation. We have a generation to rear. If you think because of your intellectual arrogance you're exempt—"

She got up and walked away. He sat gripping the edge of the seat and gazing after her. Suddenly he jumped to his feet and gave the seat a mighty kick. It had only been constructed that day. One yellow brick fell out.

He swore, and stuck it crookedly back. Then he went dawdling along behind Ellen, feeling

ferocious. She was stepping circumspectly over the rough ground.

At the corner where the drug-store had been, Lefty Smith stepped out of a broken doorway. He didn't look around, and thought Ellen was unescorted. He fell in behind her.

"Hello, sister, how 'bout you an' me—"

Russell pulled him round by the ear.

"Smith, you're incorrigible," he said. "You're for the cooler tomorrow. Meanwhile, here's something to go on with."

His uppercut was misjudged, and caught Smith in the Adam's apple. "Sorry," said Russell, and split Smith's lip with a straight left. Smith decided to lie down and think it over. He'd served his purpose as an outlet for Russ's feelings, anyway.

Ellen had watched this brief slaughter. Russ saw the passing glint of excitement in her eyes. Yes, she was different from all women and yet like all women. She got a kick out of seeing men fighting for her.

"I'd better see you back to your apartment," Russ grunted.

"As you wish," she said, distantly. "But don't unbutton your armor, Sir Lancelot—you're not staying."

At the bottom of the stairs, she said: "There's no need to come up."

"I didn't pick up that uranium report, and the Mayor wants it tonight."

"Oh, well—come on, then."

As soon as he entered, he began: "Ellen—"

"There's the report," she said, thrusting it into his hand.

"Look," he said, "let me get this straight, and I'll go. You love science more than you love me. Is that it?"

"You could put it that way."

"Right," he said. "That ends it." He turned to go.

"Wait," she said. "If you don't mind, I'd like back that snapshot. The one that stood there." She indicated the place.

"Do you make an inventory every time I come and go?" he asked, sarcastically.

She held out her hand.

"I'd like to keep it to remember you by," he said, taking it from his pocket and looking at it.

"I don't want you to remember me." And then she said an odd thing: "I don't want to remember myself."

He passed it to her silently, and left. For the rest of his life he remembered the sight of her standing, watching him go. The tall, very feminine figure. The dark sweep of hair. The photo in one slim white hand. The unusual pale blue eyes watching him with the detachedness of royalty.

It was the last he saw of Ellen Carr.

Chapter II

He trudged along the pitted road towards the Mayor's house. The last twenty minutes had been unreal. They hadn't registered. Things had happened, things had been said. But they had all been too quick. Time was only now slowly giving them form and significance. He had been a worried man, seeking to park his cares for the evening, even daring to hope for Ellen's permanent companionship. And suddenly he had butted into a wall and lost that companionship forever.

He was bewildered, angry, unhappy. There was a queer ache about his heart.

The Mayor was inking in a pile of tracings for blueprints, in the fading daylight. The candles were laid beside the candlesticks, ready for the continuance of work after dark. He allowed himself four a night, burnt in pairs. He never stopped work until the last candle had sputtered and died.

Mayor Pat Walkley was 69. He'd come to Pinetown an illiterate bricklayer of 18. He'd educated himself, lifted himself by his own bootstraps, and become the biggest contractor and wealthiest man in town. When he became Mayor, he retired from business. In the short year before the war

struck he did more for Pinetown than any other man in its history.

For one thing, he'd got Pinetown on atomic power ahead of many more important towns. And the secret wish of his heart had been granted: there had been an article about him in *Reader's Digest*.

Russ walked in.

"Here's the U.235 report from Miss Carr," he said in a low voice, stuck it in a corner of the table, and slumped in a chair.

"Miss Carr?" echoed the older man. He scratched his head with the end of the mapping pen, and looked at Russ from under his white eyebrows. But Russ didn't say anything. Walkley picked up the report.

"H'm," he said, presently. "The pile's getting mighty low. I don't know how long I'm going to last myself, but it looks like I'll see the last of our U.235 out. Something's got to be done, son."

"Isn't there plutonium—or something?" said Russell, indifferently.

Walkley said, "There's probably something. The hell of it is that I wouldn't know the something if I saw it. Neither would you. Why did the bomb have to take the whole technical staff of the pile in one swipe? If it had spared but the youngest apprentice, he'd have known more than the rest of us. We're kids playing with fire, but we've got to

have that fire. We've got to establish contact with any other oases there may be."

"This may be the sole Ararat," muttered Russ.

"Remember the airplane of the 17th May."

Russ remembered. Two citizens had reported seeing a plane, flying some twenty miles off, low along the western horizon. It had passed and gone. It was never seen again. But the whole town had become wildly excited and kept a smoke-fire burning in the market square for a week.

Russ had been as excited and hopeful as the rest. But now he was wearing dark glasses. "It was probably a bird or an optical illusion," he said. "The radio doesn't even give us an illusion."

There were twenty-three radio receiving sets left intact in the town. Since the raid nothing had been heard on them but static.

The Mayor said, "Broadcasting stations are primary objectives in war. Maybe there's not one working anywhere on the continent. But you can't wipe out human beings as easily as that. There must be millions still around. Maybe it's not really too bad out there. You can't judge everything by Pinetown."

"If they can flatten an unimportant, unproductive place like this, in the middle of a desert..." began Russ loudly, but the Mayor shushed him.

"Let it rest. What's got into you to-night, Russ? You're the guy who's going to step into my shoes, and I've always thought you the right guy. But these shoes aren't for anyone who can only beef and think negatively. If you don't have faith that all's going to turn out for the best in the end, you won't get far. It's all in the point of view—"

"All right, I read your article in the *Digest*," Russ growled.

The Mayor colored a little. He started screwing two of the candles in the sticks.

"You're sore at me over something. What is it?" he asked quietly.

"You gave Ellen Carr permission to work on the pile, didn't you?"

"I did." Still quietly.

"Knowing that the thing's short on graphite and radiates like a log fire."

"It's not all that bad. Anyway, Ellen knows the extent of the danger. She knows more about it than either of us."

"You remember what happened to Lilian Webb?" pursued Russ. "It may happen to Ellen. She told me."

"She told me too," murmured Walkley, and began playing with the two unlit candles. "Even in the old days, it seems, no one knew much about the effect of neutron radiation on people. They knew continued X-radiation pro-

duced sterility in males, and that neutron radiation is four times more powerful in that direction. And they knew that in females neutron radiation is liable to start tumors on the internal organs, particularly the kidneys. That's what happened to Webb."

"And then?"

"A benign tumor on the kidney pressed upon the cortex of one of the suprarenal bodies. That made it empty into the bloodstream a good deal more than the natural supply of sex hormone. Result: virilism. She developed masculine characteristics. Became, in fact, a man. There were many such cases known to medical history."

"Couldn't Doc Willis have cut away the tumor?"

"Willis is just a G. P. Our only surviving medical man of any sort. He's not a surgeon. He could diagnose, but he couldn't operate. In any case, Webb wanted to keep on work at the pile. The tumor would have grown again. If the change should happen to Ellen, it'll be permanent. She knows that. She went into it with her eyes open. You can't blame me."

"I can blame you for taking her from me. To-night I asked her to be my wife."

One of the candles dropped from the Mayor's hand, rolled over a tracing and smudged the still wet ink.

"Russ. I had no idea. I thought—you were just friends. If I'd have known—"

He came around the table and put a hand on Russell's shoulder.

"I'll cancel the permission," he said.

"It wouldn't give me Ellen back," said Russell. "The split's come now. She turned me down deliberately. She admitted her love for science was greater than her love for me."

"She means her love of the good science can do, not science itself. Look, Russ, to keep the town healthy and well fed we've got to recover some of the old knowledge. We need all the science we can get. We only produce just enough food. If there's a threat of blight to the crops, we want to know what to do. The population is bound to increase—"

"Not if all the women behave like Ellen Carr," said Russ.

"We've got to make arable land of that desert—somehow. Some application of atomic power may do it. There's medicine. We've one overworked doctor and no therapy center. Ellen dug some book out of the library ruins. It's badly burnt, like the rest. But there was some important dope on extracting radioactive isotopes from U.235. They've invaluable medical uses, for one thing. If Ellen has to sacrifice her sex, it'll be in the cause of us all,

not for any private reason."

"I don't give a hoot about her reasons," said Russell, bitterly. "She didn't see fit to discuss them with me. She chose her path. She can take it. If I were made Mayor right now I'd still let her go, and be damned to her."

"You'll get over this bitterness, Russ. To-morrow morning—"

But Mayor Walkley was not to know to-morrow morning. Russ leaned forward to rest his elbows on his knees, and the bullet that was meant for the back of his head fanned his hair and drilled into the Mayor's heart.

At the report, Russ leaped up, seized his chair by its arms and flung it behind him. One leg grazed Lefty Smith's cheek. The other knocked the smoking revolver from his hand.

Lefty dived after the gun. Russ dived after Lefty, grabbing one of the candlesticks as he passed.

Lefty got the gun. At the same time he got a crack on the skull from the base of the candlestick. The base was heavily weighted with lead. Lefty had a thin skull. He'd missed his revenge, and now he'd missed all chance of it.

There was no to-morrow for him either.

With a little groan, Russ knelt over Walkley. Even in the flickering light of the remaining candle, it was plain enough.

The Mayor was dead. Long live the Mayor!

CHAPTER III

The new Mayor's inheritance was the broken bones of a city, several hundred square miles of desert, unending work and absolute authority. Pinetown was under a benevolent dictatorship, but it was a dictatorship.

"Democracy can return later, when there's time for subcommittees to argue," Walkley had said. "First things first. Order and discipline, single-minded direction—until we're on our feet. That means rule by a strong man who knows what to do and the quickest way to do it. And that means me, and probably my successor. We'll see."

Russell Howard continued the autocracy. He hoped it wouldn't be too long before he could spread the burden. But Walkley had left plenty of pressing problems unsolved.

Of the sheaves of atomic missiles launched at the Pinetown area, only a few single rockets had hit the center of the target. Whether intentionally or not, the bulk had saturated a great outer circle around the city, well out in the desert. The terrain of porous rock out there had retained the radioactivity unusually long. It was still an impassable barrier, and from the Geiger-Muller counts would remain so for a long time yet.

No exploring party had found a break in it. No storming out expedition had survived the crossing of it. There were no planes, no automobiles. The monorail that used to bear the 20th Century through Pinetown dropped into a great bomb crater like a frozen thread of water.

The isolation had to be broken. It must be faced: Pinetown was not self-sufficient. The water supply was limited. Therefore, so was irrigation and the crops. Scarcely any raw materials, no fuel. They were living on their small and dwindling capital. They must link up with outside.

Walkley and he had been working on an airplane, to be driven electrically by a battery charged from the pile. It was a bizzare contraption, a patchwork from half a dozen wrecked fighters. They knew little of aerodynamics. It was probably a death trap. But it had to be finished.

There were many things that had to be finished....

The new Mayor worked eighteen hours a day and often more. They said his energy was miraculous, greater than Walkley's at his peak. They didn't know he was cramming his mind with a thousand things to squeeze out the one thing that sought to dominate it: the memory of Ellen Carr.

There was no Ellen Carr now.

But there was an Alan Carr, a young man who worked at the pile. This Russell knew from reports. He'd never been near the pile again, nor Ellen's old apartment. Sometimes he wondered whether his drive to break out of the city was anything else than a desperate flight from all that.

He'd organized an H.Q. on quite a scale. There was a drawing office. There were desks, typewriters, files, even a dictaphone they'd got going. No candles, but electric light burning all night—run on a line from the pile.

There were executives, designers, clerks, typists.

Especially one typist.

Her name was Maureen. She was eighteen, and she came from what had been uptown. She was petite, dainty, uncomplicated. No Mona Lisa smile about her, but a cheerful grin. She was of Celtic stock. She had black hair and light blue eyes, and when you saw her face at a certain angle—you felt a little stab, if Ellen Carr had meant anything to you.

Was that stab pain or pleasure? Russ didn't know. But he found it grew necessary, and unless Maureen was around it became hard to concentrate. When she was there, a void was filled.

He found he was sleeping better. And others found his temper better.

Maureen became his private secretary. The next development

was old, old. She affected sophistication in her speech sometimes, but she was quite uncalculating. He wondered whether she ever thought of him beyond his work. But these days he scarcely existed beyond his work. He must show her he had other interests. That he was human.

He took her to one of Jed's little shows. And then a dance.

On the way home: "Maureen," he said. "Are you the marrying sort?"

"Oh, I think so. It runs in the family. My mother got married."

"Would you consider marrying me?"

She colored faintly, and looked away.

"Yes, I'd—I'd consider it."

She didn't resist his kiss.

Soon at the office they were exchanging little affectionate messages with their eyes—privately, intimately, despite the press of company and business. They became engaged.

Then one day Maureen didn't turn up at the office. She sent a message to say she wasn't well. Russ stuck it till midday, then sacrificed his lunch to go and see her.

She lay on the couch. The vivacity had left her. She was very pale. Even her eyes seemed more pale. Pale blue eyes. Russ inhibited a memory.

"Hello, Russ....Guess I've been overeating."

"Overworking, more exactly. I've been a fool, crowding you along. I should have remembered women have difficulties men never think of. Next time, girly, don't be afraid to tell me. I'm six hundred kinds of a fool, but don't let me hurt you again."

"It isn't that, Russ, It's—I don't know what. I haven't the energy of a louse in its dotage. Doc Willis doesn't know what it is, either."

Doc Willis didn't, then. But at the end of a week, when he saw his patient develop purpuric rash, enlargement of the lymphatic glands, and a high temperature accompanied by a growing anaemia, he knew all right.

He came thrusting into the office in the middle of a conference on the relaying of the sewage system. He wanted to see Russ immediately.

Russ told him: "If we don't get this business settled to-day, you'll have more cases of bubonic plague on your hands than you'll know what to do with."

Willis said: "If anyone gets bubonic, you have to shoot 'em—that's all I know what to do. I'm here about something we can deal with right away—and it's got to be dealt with right away."

"What's that?"

"The case of Maureen Knight."

Russell went taut. "I'll be right with you—This meeting is ad-

journed for an hour. That enough, Doc?"

"Should be."

The office cleared, save for the Mayor and the doctor.

"What's wrong with Maureen, Doc?"

"Leukemia."

"Is that bad?"

Doc Willis chewed his thumb-nail and gazed at the floor.

"Medical science has always regarded it as fatal. Arsenic or benzole can stave it off for a bit. Not for long. Maureen's is a chronic case threatening to turn acute."

Russell's face was like stone. "I thought you said we can deal with it."

"It's this way," said Willis. "Leukemia is a hyperphasia of the tissues producing white cells in the blood. An excess of white cells is anaemia. Her blood's getting clogged with 'em. You can break 'em down with X-rays—if you can get them without at the same time burning up the healthy tissues. But that's near enough impossible with exterior radiation, or even with radium needles. However, just before the war they were developing a technique for getting around that, using radioactive tracers."

"What are they?"

"I think," said the doctor, getting to his feet, "you'd better hear about them from the person who knows most about them—

Alan Carr. He's waiting outside.

There was a pause.

"Bring him in," said Russell Howard.

It might have been Ellen's brother. He was tall, slim, pale. The black hair was cropped short. The lips were pale now, and around them was the light shadow of shaven hair.

There were little, curling black hairs on the backs of his hands. . . . The hands were thin, muscular, stained from work—there was no memory of Ellen there. But Ellen looked at him through the pale blue eyes, and the faint, enigmatic smile was Ellen, too—it touched him on a nerve, and he winced.

"Do you wish me to stay?" asked Doc Willis.

"Yes, Yes. Stay," said Russell, jerkily. He put his fingers to his eyelids, as though his eyes ached, and passed the tips down his cheeks. He affected weariness, indifference. "Perhaps your colleague will explain his technique for dealing with leukemia." He spoke as though Alan Carr was a stranger. Perhaps he was.

In a quiet, unemasculated voice, Carr said: "Theoretically, it's simple. In practice, less so. The marrow of the bones is the chief birthplace of white blood cells. We have to get radioactivity into the marrow to break down the excess of those cells. Radium would be fatal. Its effect lasts

too long. 1690 years too long, to be exact. But, by exposing them to neutron streams from the pile, we can make common chemicals radioactive. Including substances absorbed into the body by metabolism."

"Such as?"

"Iodine, carbon, phosphorous. These treated substances act chemically in the same way as their inert isotopes. Now, bones have a large phosphorous content. A large proportion of phosphorous taken in food will be deposited in the bones. If some of that phosphorous is radioactive. . . ."

"I get it," said Russell. "But prolonged radioactivity in the body is fatal you say. How, then—"

"The half-life of radio-phosphorous is only fourteen days. Just long enough to produce good effects and avoid harmful ones. Treatment can be continued according to the patient's condition."

"Then a permanent cure is possible?" said Russell.

"Possible, yes, but certain, no," said Carr. "We don't know enough about it to be certain. Even before the war they didn't know enough about it. And I've only a few tattered scraps of information to go on. Those, and my judgment."

Russell was thoughtful and silent.

"It's the only chance," Doc Willis prompted. "If it's not certain, the alternative is—I can assure you of that."

Russell took out his handkerchief to wipe his lips.

"Begin treatment at once," he said muffledly."

CHAPTER IV

Alan Carr had attended Maureen Knight for two months, supervised four meals containing radioactive phosphorous and traced it with a G.-M. counter, and made copious notes. He had also made her very thorough acquaintance. There was not a great deal to know about her. She was not complex.

On the other hand, he remained enigmatical to her, and because of that, fascinating. She realized she only knew a corner of him, and there were great tracts of his knowledge, experience and apprehension that were hidden from her. Constantly she tried to discover more of him. They had long talks

She spent most of the day on a chaise-longue reading the books he had lent her, listening to the Chopin he played for her, reflecting on some life-revealing thing he had said. He was far more handsome than Russ, more courteous, more understanding. And more self-controlled.

Perhaps, she thought, he was

more understanding because he had once been a woman. It was the strangest thing, trying to picture him as Ellen Carr. She always failed. Maybe because she had never known Ellen Carr. Alan was completely masculine. Very attractively so.

Russell called as often as he could slip the responsibilities of the Mayoralty. It wasn't often. And he was usually worried and tended to unload his worries on her. It was rather thoughtless, she thought. He seemed to expect from her a strength she'd never had since this languishing anaemia set in. Though she was feeling noticeably better now.

She began to notice that she looked forward to the visits of Alan, while those of Russ took all her patience.

One day Russ arrived while Alan Carr was there. Maureen was talking with real animation to Alan. It was an animation Russ rarely saw nowadays. His face lighted up. It was Maureen of the office days, the grin, the cracks she tried to make sound sophisticated.

Alan Carr stood up. All except the halt had to stand in the presence of the Mayor.

"Sit down, Alan," said Russ. It was the first time he'd used the name, the first time he'd felt any kind disposition towards him. Carr had restored Maureen. That must never be forgotten.

"I was just going," said Alan Carr.

"I'll see you to the door," said Russ.

Carr shrugged slightly. He gave Maureen a parting smile. She started to smile back, and then her face went serious, as though she had suddenly thought of something. Russ saw it, and was vaguely disturbed.

But, out of earshot of Maureen, he said: "Well, Alan Carr, it's odd how things turn out. I lost the one I loved to science. If I hadn't, I should have lost the one I love now. Maybe I can appreciate your point now. I mean, to love science is to love what it can do for people generally, instead of restricting it to one person. That's it, huh?"

That faint puzzling smile was evident again. This time it didn't wound. Rather, it irritated. Russ didn't like to be smiled at when he was trying to be sincere. But he never had been certain of the source of that smile. It was something deep and probably not akin to anything in Russ's own nature.

"I don't think you appreciate my point at all," said Alan Carr. "I doubt if you'll ever be able to. Good day."

Russell went back, his perturbation growing. He didn't like uncertainty. His instinctive reaction to it was to take positive action. He went straight to the point.

"Maureen, by all reports you're on the upgrade—thanks to Carr. I don't want to rush you, but I'd like us to get married as soon as possible. D'you think you'd be well enough by, say, next week?"

"Russ," she said, not looking at him, fingering a worn place in the tapestry of the couch, "I was going to ask you to release me from our engagement."

Maureen bit her lip.

"What?" It was as if he'd been hit by something solid.

"I'm sorry," she said. "You've been so good to me. I like you an awful lot, really. I thought I loved you. I *did* love you. It's only that I've found I love someone more."

"Who?"

"Alan."

He sat down, and didn't know whether to laugh, cry, or break up the furniture. He began a silly little tittering. It was all so damned crazy.

The person he had once hoped to marry looked like the person marrying the person he now hoped to marry. Say that again, and try to make it sound sense. It was like one of those riddles about who is whose father. His late love had come to steal his present love. The two girls he wanted to marry end up by marrying each other! Any way you looked at it, it was still the maddest thing since Jonah and the whale.

"And what does Alan think

about it?" he asked, presently.

"He loves me. He told me so."

"I see," he said. "I see." Quite calmly, he went on: "Well, Maureen, I can't hope to change your feelings by argument, so I won't try. You know I love you and always shall. Let's leave it at that."

But a little devil of white-hot anger had been born inside him. A devil who was growing, taking possession of him, and who had no intention of leaving it at that.

Russell Howard went home. He locked himself in his apartment with several quarts of rye and bourbon.

The jag lasted a week. He saw no one, would answer no one, and ate nothing but a few crackers.

When he came out of it, he wasn't Russell Howard any more. He was Nature's chosen agent to avenge an abominable outrage that had been done to her. That was the way he saw it. Or perhaps that was the way the devil who possessed his sickened and humiliated soul made him see it. He was Mother Nature's special representative charged with a holy mission.

He turned up at the office with bloodshot eyes and a splitting head. He had a week's growth of beard. That would have to wait. His hands were too shaky to deal with it now, and he didn't want a barber or anyone else to lay a finger on his riven skull.

The acting secretary, a fat blonde woman, was quivering with the burden of urgency.

"Oh, Mr. Howard, I've been trying to get you for the last three days. There's a report in from the atomic pile—"

"Send someone for some sandwiches," he said tersely. "I'm hungry."

"Yes, but—"

"Go on!" he roared.

She jellied away, but was brave enough to return before the sandwiches.

"Mr. Howard, this *is* important. The fuel at the pile is running unexpectedly low. It may last another two weeks, not more."

He stared at her. "Someone's responsible for miscalculation, then," he said. "I understood there was enough for several months yet. Give me that report."

As he reached to take it, the whole plan leapt into his mind, complete and detailed. It was as though it had already been prepared by someone and held in reserve until this destined moment. Oh, yes, he was only an agent, doing the bidding of a power greater than himself. He could not have thought this up himself.

"Send for Rollins," he said, quietly. "And when he's on his way, send for Alan Carr and have him wait in the outer office."

He'd digested the report on the U.235 situation when Rollins arrived.

"Sit down, Rollins. How's the anti-radiation equipment going?"

Rollins had for some time been working on Project Breakout No. 10, the organization for the next attempt to cross the wide radioactive belt. The main new points of this Project were special suits and masks to be worn by the party and insulated tents to sleep in during the traverse.

Rollins said: "Fraid there's, nothing fresh to be added to my last report. Can't get the material to guarantee more than 53% protection. If it weren't for these darned shortages—particularly graphite—"

"Never mind. That's good enough. Get four suits and a tent to hold four ready by Tuesday next."

"But they'll be death-traps," said Rollins, surprised. "They won't stop anyone being burned to the guts before they're halfway across the belt."

"No one's crossing the belt," said Russell. "It's just a little foraging party."

"Even so, I wouldn't hold a brief for their lives for more than a couple of days."

Russell rang for the secretary.

"Show Mr. Rollins out and Mr. Carr in."

He didn't have to remind Rollins he was under orders. Rollins knew there could be no further argument. He left, depressed.

Alan Carr came in.

Russell didn't tell him to sit down. He made him stand.

"I hear the U.235 is running out. Why wasn't I informed earlier of this?" Russell snapped it out like a whip.

"Because you were drunk and incapable," said Carr, calmly.

"Somebody at the pile must have been the same way—or just plain incapable," said Russell. "The last figures show a reserve of at least five months."

Carr shrugged. "Not my department. I'm not running the pile. I'm only engaged in research."

"Well, well. That's a fine exhibition of the spirit of science, I must say. Nothing to do with you, eh? I thought you were so keen on science you'd sacrifice anything—or *anybody*—for it?"

He could not help the emphasis on "anybody." That wound still had not healed.

"Your thoughts are not my affair, either, Mr. Howard."

Russ clenched his fist, then slowly unwound it. Crude violence now would spoil the greater plan. He looked narrowly at the slim, cool figure. It was Ellen's eyes that stared him out. He looked down at the report again.

"We'll soon see how far this devotion to science goes," he muttered. And suddenly he shot out: "Do you love Maureen Knight?"

There was a silence.

"I am bound to answer ques-

tions dealing with my work," said Carr, in a low voice, "but my personal affairs remain my personal affairs."

Russell depressed the corners of his lips.

"And I thanked you for saving her for me! You saved her for yourself."

"She's not saved for anybody," said Carr. "For a long time yet she'll need a diet of radioactive phosphorous to keep her alive. And the pile will run out in a couple of weeks."

"Can't you build up a store?" The question was perfunctory. He knew the answer well enough.

"If I baked ten tons of phosphorous, it would all lose radioactivity within fourteen days."

"So we've both lost Maureen, it seems. You don't appear to be very upset."

"Don't I?" said Alan Carr, and Russell was reminded that there were still a lot of angles about that personality he hadn't even guessed about. There was some pattern of deep emotions behind that controlled exterior. What that pattern was he'd never know unless Carr unburdened himself. There was small likelihood of that.

"Be that as it may, I'm going to give you the chance to save her," said Russell.

Carr went very still. "How?"

"I've been investigating a report that there's an unexploded

atomic rocket lying out there in the radioactive belt. It's the real thing, all right. Here's a photo taken through a telescopic lens. . . . You'll be able to see it through a telescope from Point 679 on a bearing of 23 degrees."

"You're sending me?"

"I'm putting the facts before you. We want that U.235 out of the bomb. It'll be a ticklish business getting it out. You know more about it than anyone. You're the safest bet. We've got to have the stuff. If we don't, my airplane will never get off the ground and the chances of reaching the outside slip near to zero. And if you care for Maureen, here's your chance to keep her alive. I'll send three huskies with you from the labor squads to do the heavy work. Rollins will have protective suits and a tent ready for all of you by Tuesday."

They held each other in a steady gaze for a long moment.

Russ thought: He knows I'm sending him to his death. He knows that if he gets back at all, he'll be burned to a cinder.

But Carr said nothing.

Russ said: "It's all for the sake of science, you know. You're not choosy about making sacrifices for that? You used not to be."

Bitterness stained every word.

"I'll go," said Carr. "Is that all?"

Russ nodded. The bitterness had turned into a pain that grip-

ped him so that he could not speak.

Alan Carr turned to leave. The ghost of the strange smile had come back. He said something under his breath. Russ caught a bit of it: "...kills the thing he loves."

"What was that?" jerked Russ.

"Oh, nothing...." The door closed behind Carr.

CHAPTER V

They'd been gone thirty-four hours. They should be near the bomb now. Perhaps they'd already pitched camp at it.

Russ was beginning his second quart of whisky.

He had tried to see Maureen. She'd held him off. Sent a message by Doc Willis that she didn't feel well enough to receive visitors. Doc upheld her.

Of course, they both knew he'd sent Alan Carr to practically certain death through a mad jealousy. Everyone knew he was playing Othello.

There had been no need to risk killing off the best scientific brain in the town. A score of other atomic workers knew enough to have made a fair attempt at the job.

Russ reached for the glass. As his fingers touched it, there came a low distant rumbling. It was a purely conditioned reflex action as he plunged straight to the

floor, under the table, leaving the whisky standing above his head. That sound was an echo from the long night when Pinetown died.

The rumbling swelled into a rolling roar. A blast of heated air smote Pinetown like the hammer of Thor. The building heaved, the window flew into a thousand fragments, the ceiling came down with a rush and a choking gray cloud of plaster dust sprang from the floor and filled the room.

All through Pinetown unsafe buildings rocked and fell, and a rack of burning sand and dust rolled like a tidal wave over the town. All at once it was twilight, though the red smeary sun hung up there at zenith. A glow was spreading in the building across the street: a fire had started.

Then the wind passed, carrying much brick dust mixed with the dust of the desert. The glow across the road shrank but still continued to burn. The faint crackle of its progress, a slithering here and there of loose debris, and some distant calls for help were the only sounds in the town now.

Russ heard none of them. He lay under a splintered table listening to a dead voice in his mind.

*There's no new wisdom,
Russ. It's all in the Upani-*

*shads: Datta. Dayadhvam.
Damyata. To give. To sym-
pathize. To keep control.
There's no other way to live
fully....*

Live fully! And he'd smashed that bright and aware life like someone slamming at a rat. Give! — he'd given a death sentence. Sympathize! He'd had plenty of sympathy. For himself. Keep control! That was a laugh.

So he laughed. He laughed until he cried. He thought he'd been living in hell. Now he found what hell was really like.

CHAPTER VI

It was well past the middle of the night when Doc Willis came banging at the split door. There was no need to bang so loudly. Russell was awake. For three weeks now he'd scarcely known what sleep was. But he had learned the living death of insomnia. Russell opened up.

"It's Maureen," said Doc. "Her chances of seeing the dawn are pretty small. I think she knows it. She wants to see you."

"I've tried a dozen times to see her," said Russell. "Why this last minute change of heart?"

But he felt no curiosity. Nor sadness nor anger nor, any longer, shame. He could not even feel tired. He was like something frozen alive in ice.

Willis, who did feel tired, said wearily: "I don't know. She just wants to tell you something. And when it's over, remind me — I've something to give you."

They walked together through the silent night.

Doc Willis said once: "There's been no hope, of course, since the pile stopped. Pity that gamble to get uranium didn't come off."

Russell said nothing.

When they got there, all there was to see of Maureen was a pale yellow face, with the teeth protruding through the shrivelled lips, the cheekbones jutting — it was the face of a little old Chinese lady. The eyes had yellowed, too. The hair was soot-black, lustreless. The rest of her was beneath the bed-clothes, and it was as well. There had never been much of her at any time.

The jaundiced eyes moved slowly to his face. A small, gasping voice answered: "Hello... Russell. I haven't... much time."

"I guess none of us has," said Russell. "I've been trying to see you —"

"I know... I was foolish.... It doesn't matter now.... Nothing matters very much...when you're where I am. I loved... Alan so...and you killed him."

"Yes," said Russell. "I loved you. I was insanely jealous, and I killed him. I knew there was a strong chance of the bomb go-

ing off when they tried to operate on it. If it hadn't been that, it would have been the radiation. He had no chance, and he knew it. It's no good my saying I'm sorry. I'm beyond feeling sorry. I'm beyond feeling anything. There's no difference between you and me, except that I'm standing up."

"I can still feel...sorry. For you."

It was as if the ice had started to melt, and he stirred with pain.

"Don't, don't," he said, abruptly. "It — hurts."

"I wanted to...tell you...about Alan. He...came to see me...before he left....He said he didn't want....to hurt me....but he didn't love me.... He'd made....a mistake.... He said....he'd make every effort....to get back....with the uranium. For my sake. And....for your sake. He said...you loved me...very much. And...I was to forget him...and make you happy...when I got well."

Doc Willis watched the face of the man at the bedside, and then he got up and went to gaze out of the patched window at the night. He'd been at too many distressing death scenes not to get hardened. But he knew Russell too well to be able to watch his agony with any detachment.

At the window he watched the pale stain of dawn spread slowly up the sky. He had not listened to the quietly murmuring voices

behind him because it was none of his business.

And now one of the voices grew very faint and passed and was heard no more.

Russell wandered through the streets in the early light. He had started to go home, but that purpose had faded and was forgotten. He was slouching along quite aimlessly.

All at once he found himself looking down at the yellow brick seat in the park, where he had proposed to Ellen, where he had been rejected. He sat down slowly.

He became aware of the crumpled envelope in his hand. Doc Willis had had to remind himself to give it to him.

Russell plowed it open with a forefinger. He tried to focus his attention on the sheets it contained.

A letter in Ellen's handwriting. No — Alan's writing. Same thing.

Dear Russ,

I left this with Doc, and you'll only see it if Maureen doesn't survive. I shan't survive myself, of course, but—and this will surprise you—I don't want to.

But I do want Maureen to live. She can give you the happiness I was never able to. So I hope you never see this.

But should you lose her, I would like you to understand that I didn't deliberately try to take her from you. All this trou-

ble has arisen because I am the sort of character I am. I can't help it. I tried to change it with my sex, but it was born in me and it stayed in me.

Ellen Carr was much too fond of Ellen Carr. Surely you must have gathered that from the number of pictures of her in her own apartment. And the number of mirrors.

We go through a period of narcissism in childhood, when we become exceptionally self-conscious, when we spend half our time admiring ourselves in mirrors. I stuck there, that's all. I never grew out of that phase.

But I hated it, and hated myself. Myself? How many selves are we? — Who was the self that loved myself, and who was the self that despised myself because of that? And who was the self that loved you? — because I did.

But I knew it was no use marrying you, because I'd always love myself more than I loved you. You deserved better than that. I deliberately took the post at the pile, not because of any special love for science, but to give you a chance to escape from me—and me a chance to escape from myself.

As far as I was concerned, it didn't work out. Alan Carr remained in love with Ellen Carr. His physical form had changed. His memory hadn't. He used to moon over her pictures and long

for her, until he destroyed them. He thought he'd escaped at last. And then he met Maureen Knight.

He saw in her just what you had seen in her. He and you were both in love with a memory. Maureen had physical features and little personal characteristics which partly personified that memory. She was very reminiscent of Ellen, you know. We both made our longings material in her.

Maureen, unfortunately sensed Alan Carr's longing and returned it. She let him know, and he was foolish enough to admit to her he loved her. The moment he told her that he realized it was a lie. He loved only the ghost of Ellen Carr he saw in her.

His self-disgust became more than he could bear. And against his will he was hurting Russell Howard all over again.

There seemed no course left but to make an end of himself and his harmful self-love. And then you handed him the opportunity and the means. He accepted it gladly. Especially as through it he might save Maureen's life. Before he went he told her his declaration had been a mistake, and that you were the man for her.

I only hope it turns out all right for you both. If it doesn't, and you read this, then perhaps

it may persuade you not to think too harshly of

Yours,

Alan, who was also Ellen.

PS. If you remember your Greek mythology, Tiresias, the blind soothsayer of Thebes, also lived as both man and woman. He thought there was more pleasure in being a woman. But he was a relatively simple soul compared with me. I was not happy as either. There wasn't much point in going on.

He read it slowly through again, and as he did so an airplane came buzzing from the distance and circled the town. He did not raise his eyes. The plane came in for a landing on the flat stretch beyond the park. He did not look at it, at the semi-clothed inhabitants of the town who ran shouting from their beds. Pinetown was making contact with the outer world on Pinetown's own ground.

A hardly audible voice was repeating over and over again in his memory: "Each man kills the thing he loves." Thousands of tongues had said that since Wilde. But no one had ever voiced the concomitant: that when he does, each man kills himself also.

There was a clamor of rejoicing about the airplane. The outer world was friendly, was going to break the radioactive ring. Life was beginning for Pinetown.

It had ended for its Mayor.

FOR EACH MAN KILLS

In the October editorial on Murray Leinster, the Dean of Science Fiction, we mentioned his first science-fiction story, "The Runaway Skyscraper," which everyone seems to know about but few to have read. Frankly, we're not too surprised because the last time anyone had a chance to see it was in the third issue of Amazing (way back in June of 1926). Since that time—primarily because of its length—it hasn't been in any S-F anthology or Leinster collection, much to the frustration of Leinster fans who've been trying to find it for years. So for all of them—and for those of you who recently enjoyed "Killer Ship"—here's the one that started it all, Leinster's very precocious—and still entertaining—variation on a theme by a man named Wells.

THE RUNAWAY SKYSCRAPER BY MURRAY LEINSTER

Illustrated by Paul

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THE whole thing started when the clock on the Metropolitan Tower began to run backward. It was not a graceful proceeding. The hands had been moving onward in their customary deliberate fashion, slowly and thoughtfully, but suddenly the people in the offices near the clock's face heard an ominous creaking and groaning. There was a slight, hardly discernible shiver through the tower, and then something gave with a crash. The big hands on the clock began to move backward.

Immediately after the crash all the creaking and groaning ceased, and instead, the usual quiet again hung over everything. One or two of the occupants of the upper offices put their heads out into the halls, but the elevators were running as usual, the lights were burning, and all seemed calm and peaceful. The clerks and stenographers went back to their ledgers and typewriters, the business callers returned to the discussion of their errands, and the ordinary course of business was resumed.

Arthur Chamberlain was dictating a letter to Estelle Woodward, his sole stenographer. When the crash came he paused, listened, and then resumed his task.

It was not a difficult one. Talking to Estelle Woodward was at no time an onerous duty, but it must be admitted that Arthur

Chamberlain found it difficult to keep his conversation strictly upon his business.

He was at this time engaged in dictating a letter to his principal creditors, the Gary & Milton Company, explaining that their demand for the immediate payment of the instalment then due upon his office furniture was untimely and unjust. A young and budding engineer in New York never has too much money, and when he is young as Arthur Chamberlain was, and as fond of pleasant company, and not too fond of economizing, he is liable to find all demands for payment untimely and he usually considers them unjust as well. Arthur finished dictating the letter and sighed.

"Miss Woodward," he said regretfully, "I am afraid I shall never make a successful man."

Miss Woodward shook her head vaguely. She did not seem to take his remark very seriously, but then, she had learned never to take any of his remarks seriously. She had been puzzled at first by his manner of treating everything with a half-joking pessimism, but now ignored it.

She was interested in her own problems. She had suddenly decided that she was going to be an old maid, and it bothered her. She had discovered that she did not like any one well enough to marry, and she was in her twenty-second year.

She was not a native of New York, and the few young men she had met there she did not care for. She had regretfully decided she was too finicky, too fastidious, but could not seem to help herself. She could not understand their absorption in boxing and baseball, and she did not like the way they danced.

She had considered the matter and decided that she would have to reconsider her former opinion of women who did not marry. Heretofore she had thought there must be something the matter with them. Now she believed that she would come to their own estate, and probably for the same reason. She could not fall in love and she wanted to.

She read all the popular novels and thrilled at the love-scenes contained in them, but when any of the young men she knew became in the slightest degree sentimental, she found herself bored, and disgusted with herself for being bored. Still, she could not help it, and was struggling to reconcile herself to a life without romance.

She was far too pretty for that, of course, and Arthur Chamberlain often longed to tell her how pretty she really was, but her abstracted air held him at arms' length.

He lay back at ease in his swivel-chair and considered, looking at her with unfeigned pleasure. She did not notice it, for she was so

much absorbed in her own thoughts that she rarely noticed anything he said or did when they were not in the line of her duties.

"Miss Woodward," he repeated, "I said I think I'll never make a successful man. Do you know what that means?"

She looked at him mutely, polite inquiry in her eyes.

"It means," he said gravely, "that I am going broke. Unless something turns up in the next three weeks, or a month at the latest, I'll have to get a job."

"And that means—" she asked.

"All this will go to pot," he explained with a sweeping gesture. "I thought I'd better tell you as much in advance as I could."

"You mean you're going to give up your office—and me?" she asked, a little alarmed.

"Giving up you will be the harder of the two," he said with a smile, "but that's what it means. You'll have no difficulty finding a new place, with three weeks in which to look for one, but I'm sorry."

"I'm sorry, too, Mr. Chamberlain," she said, her brow puckered.

She was not really frightened, because she knew she could get another position, but she became aware of rather more regret than she had expected.

There was silence for a moment.

"Jove!" said Arthur, suddenly.

"It's getting dark, isn't it?"

It was. It was growing dark with unusual rapidity. Arthur went to his window and looked out.

"Funny," he remarked in a moment or two. "Things don't look just right, down there, somehow. There are very few people about."

He watched in growing amazement. Lights came on in the streets below, but none of the buildings lighted up. It grew darker and darker.

"It shouldn't be dark at this hour!" Arthur exclaimed.

Estelle went to the window by his side.

"It looks awfully queer," she agreed. "It must be an eclipse or something."

They heard doors open in the hall outside, and Arthur ran out. The halls were beginning to fill with excited people.

"What on earth's the matter?" asked a worried stenographer.

"Probably an eclipse," replied Arthur. "Only it's odd we didn't read about it in the papers."

He glanced along the corridor. No one else seemed better informed than he, and he went back into his office.

Estelle turned from the window as he appeared.

"The streets are deserted," she said in a puzzled tone. "What's the matter? Did you hear?"

Arthur shook his head and reached for the telephone.

"I'll call up and find out," he

said confidently. He held the receiver to his ear. "What the—" he exclaimed. "Listen to this!"

A small-sized roar was coming from the receiver. Arthur hung up and turned a blank face upon Estelle.

"Look!" she said suddenly, and pointed out of the window.

All the city was now lighted up, and such of the signs as they could see were brilliantly illumined. They watched in silence. The streets once more seemed filled with vehicles. They darted along, their headlamps lighting up the roadway brilliantly. There was, however, something strange even about their motion. Arthur and Estelle watched in growing amazement and perplexity.

"Are—are you seeing what I am seeing?" asked Estelle breathlessly. "I see them *going backward!*"

Arthur watched and collapsed into a chair.

"For the love of Mike!" he exclaimed softly.

Rotation of the Earth Reversed

He was roused by another exclamation from Estelle.

"It's getting light again," she said.

Arthur rose and went eagerly to the window. The darkness was becoming less intense, but in a way Arthur could hardly credit.

Far to the west, over beyond the Jersey hills—easily visible from the height at which Arthur's office was located—a faint light appeared in the sky, grew stronger and then took on a reddish tint. That, in turn, grew deeper, and at last the sun appeared, rising unconcernedly *in the west*.

Arthur gasped. The streets below continued to be thronged with people and motor-cars. The sun was traveling with extraordinary rapidity. It rose overhead, and as if by magic the streets were thronged with people. Every one seemed to be running at top-speed. The few teams they saw moved at a breakneck pace—backward! In spite of the suddenly topsy-turvy state of affairs, there seemed to be no accidents.

Arthur put his hand to his head.

"Miss Woodward," he said pathetically. "I'm afraid I've gone crazy. Do you see the same things I do?"

Estelle nodded. Her eyes wide open.

"What *is* the matter?" she asked helplessly.

She turned again to the window. The square was almost empty once more. The motor-cars still traveling about the streets were going so swiftly they were hardly visible. Their speed seemed to increase steadily. Soon it was almost impossible to distinguish them, and only a grayish blur

marked their paths along Fifth Avenue and Twenty-third Street.

It grew dusk, and then rapidly dark. As their office was on the western side of the building, they could not see the sun had sunk in the east, but subconsciously they realized that this must be the case.

In silence they watched the panorama grow black except for the street-lamps, remain thus for a time, and then suddenly spring into brilliantly illuminated activity.

Again this lasted for a little while, and the west once more began to glow. The sun rose somewhat more hastily from the Jersey hills and began to soar overhead, but very soon darkness fell again. With hardly an interval the city became illuminated, and the west grew red once more.

"Apparently," said Arthur, steadying his voice with a conscious effort, "there's been a catacyclism somewhere, the direction of the earth's rotation has been reversed, and its speed immensely increased. It seems to take only about five minutes for a rotation now."

As he spoke darkness fell for the third time. Estelle turned from the window with a white face.

"What's going to happen?" she cried.

"I don't know," answered Arthur. "The scientific fellows tell

us if the earth were to spin fast enough, the centrifugal force would throw us all off into space. Perhaps that's what's going to happen."

Estelle sank into a chair and stared at him, appalled. There was a sudden explosion behind them. With a start, Estelle jumped to her feet and turned. A little gilt clock over her typewriter-desk lay in fragments. Arthur hastily glanced at his own watch.

"Great bombs and little cannon balls!" he shouted. "Look at this!"

His watch trembled and quivered in his hand. The hands were going around so swiftly it was impossible to watch the minute-hand, and the hour-hand traveled like the wind.

While they looked, it made two complete revolutions. In one of them the glory of daylight had waxed, waned, and vanished. In the other, darkness reigned except for the glow from the electric light overhead.

There was a sudden tension and catch in the watch. Arthur dropped it instantly. It flew to pieces before it reached the floor.

"If you've got a watch," Arthur ordered swiftly, "stop it this instant!"

Estelle fumbled at her wrist. Arthur tore the watch from her hand and threw open the case. The machinery inside was going so swiftly it was hardly visible.

Relentlessly, Arthur jabbed a pen-holder in the works. There was a sharp click, and the watch was still.

Arthur ran to the window. As he reached it, the sun rushed up, day lasted a moment, there was darkness, and then the sun appeared again.

"Miss Woodward!" Arthur ordered suddenly, "look at the ground!"

Estelle glanced down. The next time the sun flashed into view she gasped.

The ground was white with snow!

"What *has* happened?" she demanded, terrified. "Oh, what *has* happened?"

Arthur fumbled at his chin awkwardly, watching the astonishing panorama outside. There was hardly any distinguishing between the times the sun was up and the times it was below now, as the darkness and light followed each other so swiftly the effect was the same as one of the old flickering motion-pictures.

As Arthur watched, this effect became more pronounced. The tall Fifth Avenue Building across the way began to disintegrate. In a moment, it seemed, there was only a skeleton there. Then that vanished, story by story. A great cavity in the earth appeared, and then another building became visible, a smaller, brown-stone, unimpressive structure.

With bulging eyes Arthur stared across the city. Except for the flickering, he could see almost clearly now.

He no longer saw the sun rise and set. There was merely a streak of unpleasantly brilliant light across the sky. Bit by bit, building by building, the city began to disintegrate and become replaced by smaller, dingier buildings. In a little while those began to disappear and leave gaps where they vanished.

Arthur strained his eyes and looked far downtown. He saw a forest of mast and spars along the waterfront for a moment, and when he turned his eyes again to the scenery near him it was almost barren of houses, and what few showed were mean, small residences, apparently set in the midst of farms and plantations.

Estelle was sobbing.

"Oh, Mr. Chamberlain," she cried. "What is the matter? What has happened?"

Arthur had lost his fear of what their fate would be in his absorbing interest in what he saw. He was staring out of the window, wide-eyed, lost in the sight before him. At Estelle's cry, however, he reluctantly left the window and patted her shoulder awkwardly.

"I don't know how to explain it," he said uncomfortably, "but it's obvious that my first surmise was all wrong. The speed of the earth's rotation can't have

been increased, because if it had to the extent we see, we'd have been thrown off into space long ago. But—have you read anything about the Fourth Dimension?"

Estelle shook her head hopelessly.

"Well, then, have you ever read anything by Wells? *The Time Machine*, for instance?"

Again she shook her head.

"I don't know how I'm going to say it so you'll understand, but time is just as much a dimension as length and breadth. From what I can judge, I'd say there has been an earthquake, and the ground has settled a little with our building on it, only instead of settling down toward the center of the earth, or sidewise, it's settled in this fourth dimension."

"But what does that mean?" asked Estelle uncomprehending.

"If the earth had settled down, we'd have been lower. If it had settled to one side we'd have been moved one way or another, but as it's settled back in the Fourth Dimension, we're going back in time."

"Then—"

"We're in a runaway skyscraper, bound for some time back before the discovery of America!"

The Seasons Are Reversed
in Order

It was very still in the office.

RUNAWAY SKYSCRAPER

57

Except for the flickering outside everything seemed very much as usual. The electric light burned steadily, but Estelle was sobbing with fright, and Arthur was trying vainly to console her.

"Have I gone crazy?" she demanded between her sobs.

"Not unless I've gone mad, too," said Arthur soothingly. The excitement had quite a soothing effect upon him. He had ceased to feel afraid, but was simply waiting to see what had happened. "We're way back before the founding of New York now, and still going strong."

"Are you sure that's what has happened?"

"If you look outside," he suggested, "you'll see the seasons following each other in reverse order. One moment the snow covers all the ground, then you catch a glimpse of autumn foliage, then summer follows, and next spring."

Estelle glanced out of the window and covered her eyes.

"Not a house," she said despairingly. "Not a building. Nothing, nothing, nothing!"

Arthur slipped his arm about her and patted hers comfortingly.

"It's all right," he reassured her. "We'll bring up presently, and there we'll be. There's nothing to be afraid of."

She rested her head on his shoulder and sobbed hopelessly for a little while longer, but pre-

sently quieted. Then, suddenly, realizing that Arthur's arm was about her and that she was crying on his shoulder, she sprang away, blushing crimson.

Arthur walked to the window.

"Look there!" he exclaimed, but it was too late. "I'll swear to it I saw the Half-Moon, Hudson's ship," he declared excitedly. "We're way back now, and don't seem to be slackening up, either."

Estelle came to the window by his side. The rapidly changing scene before her made her gasp. It was no longer possible to distinguish night from day.

A wavering streak, moving first to the right and then to the left, showed where the sun flashed across the sky.

"What makes the sun wobble so?" she asked.

"Moving north and south of the equator," Arthur explained casually. "When it's farthest south—to the left—there's always snow on the ground. When it's farthest right it's summer. See how green it is?"

A few moments' observation corroborated his statement.

"I'd say," Arthur remarked reflectively, "that it takes about fifteen seconds for the sun to make the round trip from farthest north to farthest south." He felt his pulse. "Do you know the normal rate of the heart-beat? We can judge time that way. A clock will go all to pieces, of course."

"Why did your watch explode—and the clock?"

"Running forward in time unwinds a clock, doesn't it?" asked Arthur. "It follows, of course, that when you move it backward in time it winds up. When you move it too far back, you wind it so tightly that the spring just breaks to pieces."

He paused a moment, his fingers on his pulse.

"Yes, it takes about fifteen seconds for all the four seasons to pass. That means we're going backward in time about four years a minute. If we go on at this rate in another hour we'll be back in the time of the Northmen, and will be able to tell if they did discover America, after all."

"Funny we don't hear any noises," Estelle observed. She had caught some of Arthur's calmness.

"It passes so quickly that though our ears hear it, we don't separate the sounds. If you'll notice, you do hear a sort of humming. It's very high-pitched, though."

Estelle listened, but could hear nothing.

"No matter," said Arthur. "It's probably a little higher than your ears will catch. Lots of people can't hear a bat squeak."

"I never could," said Estelle. "Out in the country, where I come from, other people could hear them, but I couldn't."

They stood a while in silence, watching.

"When are we going to stop?" asked Estelle uneasily. "It seems as if we're going to keep on indefinitely."

"I guess we'll stop all right," Arthur reassured her. "It's obvious that whatever it was, it only affected our own building, or we'd see some other one with us. It looks like a fault or a flaw in the rock the building rests on. And that can only give so far."

Estelle was silent for a moment.

"Oh, I can't be sane!" she burst out semi-hysterically. "This can't be happening!"

"You aren't crazy," said Arthur sharply. "You're sane as I am. Just something queer is happening. Buck up. Say something sensible, and you'll know you're all right. But don't get frightened now. There'll be plenty to get frightened about later."

The grimness in his tone alarmed Estelle. "What are you afraid of?" she asked quickly.

"Time enough to worry when it happens," Arthur retorted briefly.

"You—you aren't afraid we'll go back before the beginning of the world, are you?" asked Estelle in sudden access of fright.

Arthur shook his head.

"Tell me," said Estelle more quietly, getting a grip on herself. "I won't mind. But please tell me."

Arthur glanced at her. Her face was pale, but there was more resolution in it than he had expected to find.

"I'll tell you, then," he said reluctantly. "We're going back a little faster than we were, and the flaw seems to be a deeper one than I thought. At the roughest kind of an estimate, we're all of a thousand years before the discovery of America now, and I think nearer three or four. And we're gaining speed all the time. So, though I am as sure as I can be of anything that we'll stop this cave-in eventually, I don't know where. It's like a crevasse in the earth opened by an earthquake which may be only a few feet deep, or it may be hundreds of yards, or even a mile or two. We started off smoothly. We're going at a terrific rate. *What will happen when we stop?*"

Estelle caught her breath.

"What?" she asked quietly.

"I don't know," said Arthur in an irritated tone, to cover his apprehension. "How could I know?"

Estelle turned from him to the window again.

"Look!" she said, pointing.

The flickering had begun again. While they stared, hope springing up once more in their hearts, it became more pronounced. Soon they could distinctly see the difference between day and night.

They were slowing up! The

white snow on the ground remained there for an appreciable time; autumn lasted quite a while. They could catch the flashes of the sun as it made its revolutions now, instead of its seeming like a ribbon of fire. At last day lasted all of fifteen or twenty minutes.

It grew longer and longer. Then half an hour, then an hour. The sun wavered in midheaven and was still.

Far below them, the watchers in the tower of the skyscraper saw trees swaying and bending in the wind. Though there was not a house or a habitation to be seen and a dense forest covered all of Manhattan Island, such of the world as they could see looked normal. Whatever, or rather in whatever epoch of time they were, they had arrived.

Indians Occupy Madison Square

Arthur caught at Estelle's arm and the two made a dash for the elevators. Fortunately one was standing still, the door opened, on their floor. The elevator-boy had deserted his post and was looking with all the rest, at the strange landscape that surrounded them.

No sooner had the pair reached the car, however, than the boy came hurrying along the corridor, three or four other people following him also at a run. Without a

word the boy rushed inside, the others crowded after him, and the car shot downward, all of the newcomers panting from their sprint.

Theirs was the first car to reach bottom. They rushed out and to the western door.

Here, where they had been accustomed to see Madison Square spread out before them, a clearing of perhaps half an acre in extent showed itself. Where their eyes instinctively looked for the dark bronze fountain, near which soap-box orators aforetime held sway, they saw a tent, a wigwam of hides and bark gaily painted. And before the wigwam were two or three brown-skinned Indians, utterly petrified with astonishment.

Behind the first wigwam were others, painted like the first with daubs of brightly colored clay. From them, too, Indians issued, and stared in incredulous amazement, their eyes growing wider and wider. When the group of white people confronted the Indians, there was a moment's deathlike silence. Then, with a wild yell, the redskins broke and ran, not stopping to gather together their belongings, nor pausing for even a second glance at the wierd strangers who invaded their domain.

Arthur took two or three deep breaths of the fresh air and found himself even then comparing its

quality with that of the city. Estelle stared about her with unbelieving eyes. She turned and saw the great bulk of the office building behind her, then faced this small clearing with a virgin forest on its farther side.

She found herself trembling from some undefined cause. Arthur glanced at her. He saw the trembling and knew she would have a fit of nerves in a moment if something did not come up demanding instant attention.

"We'd better take a look at this village," he said in an off-hand voice. "We can probably find out how long ago it is from the weapons and so on."

He grasped her arm firmly and led her in the direction of the tents. The other people, left behind, displayed their emotions in different ways. Two or three of them—women—sat frankly down on the steps and indulged in tears of bewilderment, fright and relief in a peculiar combination defying analysis. Two or three of the men swore, in shaken voices.

Meantime, the elevators inside the building were rushing and clanging, and the hall filled with a white-faced mob, desperately anxious to find out what had happened and why. The people poured out of the door and stared about blankly. There was a peculiar expression of doubt on every one of their faces. Each one was asking himself if he were

awake, and having proved that by pinches, openly administered, the next query was whether they had gone mad.

Arthur led Estelle cautiously among the tents.

The village contained about a dozen wigwams. Most of them were made of strips of birch-bark, cleverly overlapping each other, the seams cemented with gum. All had hide flaps for doors, and one or two were built almost entirely of hides, sewed together with strips of sinew.

Arthur made only a cursory examination of the village. His principal motive in taking Estelle there was to give her some mental occupation to ward off the reaction from the excitement of the cataclysm.

He looked into one or two of the tents and found merely couches of hides, with minor domestic utensils scattered about. He brought from one tent a bow and quiver of arrows. The workmanship was good, but very evidently the maker had no knowledge of metal tools.

Arthur's acquaintance with archaeological subjects was very slight, but he observed that the arrow-heads were chipped, and not rubbed smooth. They were attached to the shafts with strips of gut or tendon.

Arthur was still pursuing his investigation when a sob from Estelle made him look at her.

"Oh, what are we going to do?" she asked tearfully. "What *are* we going to do? What are we?"

"You mean, *when* are we," Arthur corrected with a grim smile. "I don't know. Way back before the discovery of America, though. You can see in everything in the village that there isn't a trace of European civilization. I suspect that we are several thousand years back. I can't tell, of course, but this pottery makes me think so. See this bowl?"

He pointed to a bowl of red clay lying on the ground before one of the wigwams.

"If you'll look, you'll see that it isn't really pottery at all. It's a basket that was woven of reeds and then smeared with clay to make it fire-resisting. The people who made that didn't know about baking clay to make it stay put. When America was discovered nearly all the tribes knew something about pottery."

"But what are we going to do?" Estelle tearfully insisted.

"We're going to muddle along as well as we can," answered Arthur cheerfully, "until we can get back to where we started from. Maybe the people back in the twentieth century can send a relief party after us. When the skyscraper vanished, it must have left a hole of some sort, and it may be possible for them to follow us down."

"If that's so," said Estelle

quickly, "why can't we climb up it without waiting for them to come after us?"

Arthur scratched his head. He looked across the clearing at the skyscraper. It seemed to rest very solidly on the ground. He looked up. The sky seemed normal.

"To tell the truth," he admitted, "there doesn't seem to be any hole. I said that more to cheer you up than anything else."

Estelle clenched her hands tightly and took a grip on herself.

"Just tell me the truth," she said quietly. "I was rather foolish, but tell me what you honestly think."

Arthur eyed her keenly.

"In that case," he said reluctantly, "I'll admit we're in a pretty bad fix. I don't know what has happened, how it happened, or anything about it. I'm just going to keep on going until I see a way clear to get out of this mess. There are two thousand of us people, more or less, and among all of us we must be able to find a way out."

Estelle had turned very pale.

"We're in no great danger from Indians," went on Arthur thoughtfully, "or from anything else that I know of—except one thing."

"What is that?" asked Estelle quickly.

Arthur shook his head and led her back toward the skyscraper,

which was now thronged with the people from all the floors who had come down to the ground and were standing excitedly about the concourse asking each other what had happened.

Arthur led Estelle to one of the corners.

"Wait for me here," he ordered. "I'm going to talk to this crowd."

He pushed his way through until he could reach the confectionery and newsstand in the main hallway. Here he climbed up on the counter and shouted:

"People, listen to me! I'm going to tell you what's happened!"

In an instant there was dead silence. He found himself the center of a sea of white faces, every one contorted with fear and anxiety.

"To begin with," he said confidently, "there's nothing to be afraid of. We're going to get back to where we started from! I don't know how, yet, but we'll do it. Don't get frightened. Now I'll tell you what's happened."

He rapidly sketched out for them, in words as simple as he could make them, his theory that a flaw in the rock on which the foundations rested had developed and let the skyscraper sink, not downward, but into the Fourth Dimension.

"I'm an engineer," he finished. "What nature can do, we can imitate. Nature let us into this hole. We'll climb out. In the meantime,

matters are serious. We needn't be afraid of not getting back. We'll do that. What we've got to fight is—starvation!"

Planning for the Food-Supply

"We've got to fight starvation, and beat it," Arthur continued doggedly. "I'm telling you this now because I want you to begin right at the beginning and pitch in and help. We have very little food and a lot of us to eat it. First, I want some volunteers to help with rationing. Next, I want every ounce of food in this place put under guard where it can be served to those who need it most. Who will help?"

The swift succession of shocks had paralyzed the faculties of most of the people there, but half a dozen moved forward. Among them was a single gray-haired man with an air of accustomed authority. Arthur recognized him as the president of the bank on the ground floor.

"I don't know who you are or if you're right in saying what has happened," said the gray-haired man. "But I see something's got to be done, and—well, for the time being I'll take your word for what that is. Later on we'll thrash this matter out."

Arthur nodded. He bent over and spoke in a low voice to the gray-haired man, who moved away.

"Grayson, Walters, Terhune, Simpson and Forsythe, come here," the gray-haired man called at the doorway.

A number of men began to press dazedly toward him. Arthur resumed his harangue.

"You people—those of you who aren't too dazed to think—are remembering there's a restaurant in the building and no need to starve. You're wrong. There are nearly two thousand of us here. That means six thousand meals a day. We've got to have nearly ten tons of food a day, and we've got to have it at once."

"Hunt," someone suggested.

"I saw Indians," someone else shouted. "Can we trade with them?"

"We can hunt and we can trade with the Indians," Arthur admitted, "but we need food by the ton—by the ton, people! The Indians don't store up supplies, and, besides, they're much too scattered to have a surplus for us. But we've got to have food. Now, how many of you know anything about hunting, fishing, trapping, or any possible way of getting food?"

There were a few hands raised—pitifully few. Arthur saw Estelle's hand up.

"Very well," he said. "Those of you who raised your hands then, come with me up on the second floor, and we'll talk it over. The rest of you try to conquer your fright, and don't go outside for

a while. We've got some things to attend to before it will be quite safe for you to venture out. And keep away from the restaurant. There are armed guards over the food. Before we pass it out indiscriminately, we'll see to it there's more for to-morrow and the next day."

He stepped down from the counter and moved toward the stairway. It was not worthwhile to use the elevator for the ride of only one floor. Estelle managed to join him, and they mounted the steps together.

"Do you think we'll pull through all right?" she asked quietly.

"We've got to!" Arthur told her, setting his chin firmly. "We've simply got to."

The gray-haired president of the bank was waiting for them at the top of the stairs.

"My name is Van Deventer," he said, shaking hands with Arthur, who gave his own name.

"Where shall our emergency council sit?" he asked.

"The bank has a board-room right over the safety vault. I dare say we can accommodate everybody there—everybody in the council, anyway."

Arthur followed into the board-room, and the others trooped in after him.

"I'm just assuming temporary leadership," Arthur explained, "because it's imperative some

things be done at once. Later on we can talk about electing officials to direct our activities. Right now we need food. How many of you can shoot?"

About a quarter of the hands were raised. Estelle's was among the number.

"How many are fishermen?"

A few more went up.

"What do the rest of you do?"

There was a chorus of "garden-er." "I have a garden in my yard," "I grow peaches in New Jersey," and three men confessed that they raised chickens as a hobby.

"We'll want you gardeners in a little while. Don't go yet. But the most important are hunters and fishermen. Have any of you weapons in your offices?"

A number had revolvers, but only one man had a shotgun and shells.

"I was going on my vacation this afternoon straight from the office," he explained, "and have all my vacation tackle."

"Good man!" Arthur exclaimed. "You'll go after the heavy game."

"With a shotgun?" the sportsman asked, aghast.

"If you get close to them, a shotgun will do as well as anything, and we can't waste a shell on every bird or rabbit. Those shells of yours are precious. You other fellows will have to turn fishermen for a while. Your pistols are no good for hunting."

"The watchmen at the bank have riot guns," said Van Deventer, "and there are one or two repeating rifles there. I don't know about ammunition."

"Good! I don't mean about the ammunition, but about the guns. We'll hope for the ammunition. You fishermen get to work to improvise tackle out of anything you can get hold of. Will you do that?"

A series of nods answered his question.

"Now for the gardeners. You people will have to roam through the woods in company with the hunters and locate anything in the way of edibles that grows. Do all of you know what wild plants look like? I mean wild fruits and vegetables that are good to eat."

A few of them nodded, but the majority looked dubious. The consensus seemed to be that they would try. Arthur seemed a little discouraged.

"I guess you're the man to tell about the restaurant," Van Deventer said quietly. "And as this is the food commission, or something of that sort, everybody here will be better for hearing it. Anyway, everybody will have to know it before night. I took over the restaurant as you suggested, and posted some of the men from the bank that I knew I could trust about the doors. But there was hardly any use in doing it.

"The restaurant stocks up in

the afternoon, as most of its business is in the morning and at noon. It only carries a day's stock of foodstuffs, and the—the cataclysm, or whatever it was, came at three o'clock. There is practically nothing in the place. We couldn't make sandwiches for half the women that are caught with us, let alone the men. Everybody will go hungry tonight. There will be no breakfast tomorrow, nor anything to eat until we either make arrangements with the Indians for some supplies or else get food for ourselves."

Arthur leaned his jaw on his hand and considered. A slow flush crept over his cheek. He was getting his fighting blood up. At school, when he began to flush slowly, his schoolmates had known the symptom and avoided his wrath. Now he was growing angry with mere circumstances, but it would be nonetheless unfortunate for those circumstances.

"Well," he said at last deliberately, "we've got to— What's that?"

There was a great creaking and groaning. Suddenly a sort of vibration was felt under foot. The floor began to take on a slight slant.

"Great Heaven!" someone cried. "The building's turning over and we'll be buried in the ruins!"

The tilt of the floor became

more pronounced. An empty chair slid to one end of the room. There was a crash.

Arthur and Estelle in Conference

Arthur woke to find someone tugging at his shoulders, trying to drag him from beneath the heavy table, which had wedged itself across his feet and pinned him fast, while a flying chair had struck him on the head.

"Oh, come and help," Estelle's voice was calling deliberately. "Somebody come and help! He's caught in here!"

She was sobbing in a combination of panic and some unknown emotion.

"Help me, please!" she gasped, then her voice broke despondently, but she never ceased to tug ineffectually at Chamberlain, trying to drag him out of the mass of wreckage.

Arthur moved a little, dazedly.

"Are you alive?" she called anxiously. "Are you alive? Hurry, oh, hurry and wiggle out. The building's falling to pieces."

"I'm all right," Arthur said weakly. "You get out before it all comes down."

"I won't leave you," she declared. "Where are you caught? Are you badly hurt? Hurry, please hurry!"

Arthur stirred, but could not loosen his feet. He half-rolled

over, and the table moved as if it had been precariously balanced, and slid heavily to one side. With Estelle still tugging at him, he managed to get to his feet on the slanting floor and stared about him.

Arthur continued to stare about.

"No danger," he said weakly. "Just the floor of the one room gave way. The aftermath of the rock-flaw."

He made his way across the splintered flooring and piled-up chairs.

"We're on top of the safe-deposit vault," he said. "That's why we didn't fall all the way to the floor below. I wonder how we're going to get down?"

Estelle followed him, still frightened for fear of the building falling upon them. Some of the long floor-boards stretched over the edge of the vault and rested on a tall, bronze grating that protected the approach to the massive strong-box. Arthur tested them with his foot.

"They seem to be pretty solid," he said tentatively.

His strength was coming back to him every moment. He had been no more than stunned. He walked out on the planking to the bronze grating and turned.

"If you don't get dizzy, you might come on," he said. "We can swing down the grille here to the floor."

Estelle followed gingerly and in a moment they were safely below. The corridor was quite empty.

"When the crash came," Estelle explained, her voice shaking with the reaction from her fear of a moment ago, "everyone thought the building was coming to pieces, and ran out. I'm afraid they've all run away."

"They'll be back in a little while," Arthur said quietly.

They went along the big marble corridor to the same western door, out of which they had first gone to see the Indian village. As they emerged into the sunlight they met a few of the people who had already recovered from their panic and were returning.

A crowd of respectable size gathered in a few moments, all still pale and shaken, but coming back to the building which was their refuge. Arthur leaned wearily against the cold stone. It seemed to vibrate under his touch. He turned quickly to Estelle.

"Feel this!" he exclaimed.

She did so.

"I've been wondering what that rumble was," she said. "I've been hearing it ever since we landed here, but didn't understand where it came from."

"You hear a rumble?" Arthur asked, puzzled. "I can't hear anything."

"It isn't as loud as it was, but I hear it," Estelle insisted. "It's

very deep, like the lowest possible bass note of an organ."

"You couldn't hear the shrill whistle when we were coming here," Arthur exclaimed suddenly, "and you can't hear the squeak of a bat. Of course your ears are pitched lower than usual, and you can hear sounds that are lower than I can hear. Listen carefully. Does it sound in the least like a liquid rushing through somewhere?"

"Y-yes," said Estelle hesitatingly. "Somehow, I don't quite understand how, it gives me the impression of a tidal flow or something of that sort."

Arthur rushed indoors. When Estelle followed him, she found him excitedly examining the marble floor about the base of the vault.

"It's cracked," he said excitedly. "It's cracked! The vault rose all of an inch!"

Estelle looked and saw the cracks.

"What does that crack in the floor mean?"

"It means we're going to get back where we belong," Arthur cried jubilantly. "It means I'm on the track of the whole trouble. It means everything's going to be all right."

He prowled about the vault exultantly, noting exactly how the cracks in the floor ran and seeing in each a corroboration of his theory.

"I'll have to make some inspections in the cellar," he went on happily, "but I'm nearly sure I'm on the right track and can figure out a corrective."

"How soon can we hope to start back?" asked Estelle eagerly.

Arthur hesitated, then a great deal of the excitement ebbed from his face, leaving it rather worried and stern.

"It may be a month, or two months, or a year," he answered gravely. "I don't know. If the first thing I try will work, it won't be long. If we have to experiment, I daren't guess how long we may be. But" —his chin set firmly— "we're going to get back."

Estelle looked at him speculatively. Her own expression grew a little worried, too.

"But in a month," she said dubiously, "we—there is hardly any hope of our finding food for two thousand people for a month, is there?"

"We've got to," Arthur declared. "We can't hope to get that much food from the Indians. It will be days before they'll dare to come back to their village, if they ever come. It will be weeks before we can hope to have them earnestly at work to feed us, and that's leaving aside the question of how we'll communicate with them, and how we'll manage to trade with them. Frankly, I think everybody is going to have to

draw his belt tight before we get through—if we do. Some of us will get along, anyway."

Estelle's eyes opened wide as the meaning of his last sentence penetrated her mind.

"You mean—that all of us won't—"

"I'm going to take care of you," Arthur said gravely, "but there are liable to be lively doings around here when people begin to realize they're really in a tight fix for food. I'm going to get Van Deventer to help me organize a police band to enforce martial law. We mustn't have any disorder, that's certain, and I don't trust a city-bred man in a pinch unless I know him."

He stooped and picked up a revolver from the floor, left there by one of the bank watchmen when he fled, in the belief that the building was falling.

Wild Pigeons Dash Against the Building

Arthur stood at the window of his office and stared out toward the west. The sun was setting, but upon what a scene!

Where, from this same window Arthur had seen the sun setting behind the Jersey hills, all edged with the angular roofs of factories, with their chimneys emitting columns of smoke, he now saw the same sun sinking redly behind a mass of luxuriant fo-

liage. And where he was accustomed to look upon the tops of high buildings—each entitled to the name of “skyscraper”—he now saw miles and miles of waving green branches.

The wide Hudson flowed on placidly, all unruffled by the arrival of this strange monument upon its shores—the same Hudson Arthur knew as a busy thoroughfare of puffing steamers and chugging launches. Two or three small streams wandered unconcernedly across the land that Arthur had known as the most closely built-up territory on earth. And far, far below him—Arthur had to lean well out of his window to see it—stood a collection of tiny wigwams. Those small bark structures represented the original metropolis of New York.

His telephone rang. Van Deventer was on the wire. The exchange in the building was still working. Van Deventer wanted Arthur to come down to his private office. There were still a great many things to be settled—the arrangements for commandeering offices for sleeping quarters for the women, and numberless other details. The men who seemed to have best kept their heads were gathering there to settle upon a course of action.

Arthur glanced out of the window again. He saw a curiously compact dark cloud moving swiftly across the sky to the west.

“Miss Woodward,” he said sharply, “What is that?”

Estelle came to the window and looked.

“They are birds,” she told him. “Birds flying in a group. I’ve often seen them in the country, though never as many as that.”

“How do you catch birds?” Arthur asked her. “I know about shooting them, and so on, but we haven’t guns enough to count. Could we catch them in traps, do you think?”

“I wouldn’t be surprised,” said Estelle thoughtfully. “But it would be hard to catch many.”

“Come downstairs,” directed Arthur. “You know as much as any of the men here, and more than most, apparently. We’re going to make you show us how to catch things.”

Estelle smiled, a trifle wanly. Arthur led the way to the elevator. In the car he noticed that she looked distressed.

“What’s the matter?” he asked. “You aren’t really frightened, are you?”

“No,” she answered shakily, “but—I’m rather upset about this thing. It’s so—so terrible, somehow, to be back here, thousands of miles, or years, away from all one’s friends and everybody.”

“Please” —Arthur smiled encouragingly at her—“please count me your friend, won’t you?”

She nodded, but blinked back some tears. Arthur would have

tried to hearten her further, but the elevator stopped at their floor. They walked into the room where the meeting of cool heads was to take place.

No more than a dozen men were in there talking earnestly but dispiritedly. When Arthur and Estelle entered, Van Deventer came over to greet them.

"We've got to do something," he said in a low voice. "A wave of homesickness has swept over the whole place. Look at those men. Every one is thinking about his family and contrasting his cozy fireside with all that wilderness outside."

"You don't seem to be worried," Arthur observed with a smile.

Van Deventer's eyes twinkled.

"I'm a bachelor," he said cheerfully, "and I live in a hotel. I've been longing for a chance to see some real excitement for thirty years. Business has kept me from it up to now, but I'm enjoying myself hugely."

Estelle looked at the group of dispirited men.

"We'll simply have to do something," she said with a shaky smile. "I feel just as they do. This morning I hated the thought of having to go back to my boarding house tonight, but right now I feel as if the odor of cabbage in the hallway would seem like heaven."

Arthur led the way to the flat-

topped desk in the middle of the room.

"Let's settle a few of the more important matters," he said in a businesslike tone. "None of us has any authority to act for the rest of the people in the tower, but so many of us are in a state of blue funk that those who are here must have charge for a while. Anybody have any suggestions?"

"Housing," answered Van Deventer promptly. "I suggest that we draft a gang of men to haul all the upholstered settees and rugs that are to be found to one floor, for the women to sleep on."

"M-m. Yes. That's a good idea. Anybody have a better plan?"

No one spoke. They all still looked much too homesick to take any great interest in anything, but they began to listen more or less halfheartedly.

"I've been thinking about coal," said Arthur. "There's undoubtedly a supply in the basement, but I wonder if it wouldn't be well to cut the lights off most of the floors, only lighting up the ones we're using."

"That might be a good idea later," Estelle said quietly, "but light is cheering, somehow, and everyone feels so blue that I wouldn't do it tonight. Tomorrow they'll begin to get up their resolution again, and you can ask them to do things."

"If we're going to starve to death," one of the other men said

gloomily, "we might as well have plenty of light to do it by."

"We aren't going to starve to death," retorted Arthur sharply. "Just before I came down I saw a great cloud of birds, greater than I had ever seen before. When we get at those birds—"

"When," echoed the gloomy one.

"They were pigeons," Estelle explained. "They shouldn't be hard to snare or trap."

"I usually have my dinner before now," the gloomy one protested, "and I'm told I won't get anything tonight."

The other men began to straighten their shoulders. The peevishness of one of their number seemed to bring out their latent courage.

"Well, we've got to stand it for the present," one of them said almost philosophically. "What I'm most anxious about is getting back. Have we any chance?"

Arthur nodded emphatically.

"I think so. I have a sort of idea as to the cause of our sinking into the Fourth Dimension, and when that is verified, a corrective can be looked for and applied."

"How long will that take?"

"Can't say," Arthur replied frankly. "I don't know what tools, what materials, or what workmen we have, and what's rather more to the point, I don't even know what work will have to be done. The pressing problem is food."

"Oh, bother the food," someone protested impatiently. "I don't care about myself. I can go hungry tonight. I want to get back to my family."

"That's all that really matters," a chorus of voices echoed.

"We'd better not bother about anything else unless we find we can't get back. Concentrate on getting back," one man stated more explicitly.

"Look here," said Arthur incisively. "You've a family, and so have a great many of the others in the tower, but your family and everybody else's family has got to wait. As an inside limit, we can hope to begin to work on the problem of getting back when we're sure there's nothing else going to happen. I tell you quite honestly that I think I know what is the direct cause of this catastrophe. And I'll tell you even more honestly that I think I'm the only man among us who can put this tower back where it started from. And I'll tell you most honestly of all that any attempt to meddle at this time with the forces that let us down here will result in a catastrophe considerably greater than the one that happened today."

"Well, if you're sure—" some one began reluctantly.

"I am so sure that I'm going to keep to myself the knowledge of what will start those forces to work again," Arthur said quiet-

ly. "I don't want any impatient meddling. If we start them too soon, God only knows what will happen."

Organizing the Food Supply

Van Deventer was eyeing Arthur Chamberlain keenly.

"It isn't a question of your wanting pay in exchange for your services in putting us back, is it?" he asked coolly.

Arthur turned and faced him. His face began to flush slowly. Van Deventer put up one hand.

"I beg your pardon. I see."

"We aren't settling the things we came here for," Estelle interrupted.

She had noted the threat of friction and had hastened to put in a diversion. Arthur relaxed.

"I think that as a beginning," he suggested, "we'd better get sleeping arrangements completed. We can get everybody together somewhere, I dare say, and then secure volunteers for the work."

"Right." Van Deventer was anxious to make amends for his blunder of a moment before. "Shall I send the bank watchmen to go on each floor in turn and ask every one to come downstairs?"

"You might start them," Arthur said. "It will take a long time for every one to assemble."

Van Deventer spoke into the

telephone on his desk. In a moment he hung up the receiver.

"They're on their way," he said.

Arthur was frowning to himself and scribbling in a notebook.

"Of course," he announced abstractedly, "the pressing problem is food. We've quite a number of fishermen, and a few hunters. We've got to have a lot of food at once, and everything considered, I think we'd better count on the fishermen. At sunrise we'd better have some people begin to dig bait and wake our anglers. They'd better make their tackle tonight, don't you think?"

There was a general nod.

"We'll announce that, then.

The fishermen will go to the river under guard of the men we have who can shoot. I think what Indians there are will be much too frightened to try to ambush any of us, but we'd better be on the safe side. They'll keep together and fish at nearly the same spot, with our hunters patrolling the woods behind them, taking pot shots at game, if they see any. The fishermen should make more or less of a success, I think. The Indians weren't extensive fishers that I ever heard of, and the river ought fairly to swarm with fish."

He closed his notebook.

"How many weapons can we count on altogether?" Arthur asked Van Deventer.

"In the bank, about a dozen

riot-guns and half a dozen repeating rifles. Elsewhere I don't know. Forty or fifty men said they had revolvers, though."

"We'll give revolvers to the men who go with the fishermen. The Indians haven't heard firearms and will run at the report, even if they dare attack our men."

"We can send out the gun-armed men as hunters," someone suggested, "and send gardeners with them to look for vegetables and such things."

"We'll have to take a sort of census, really," Arthur suggested, "finding what everyone can do and getting him to do it."

"I never planned anything like this before," Van Deventer remarked, "and I never thought I should, but this is much more fun than running a bank."

Arthur smiled.

"Let's go and have our meeting," he said cheerfully.

But the meeting was a gloomy and despairing affair. Nearly everyone had watched the sun set upon the strange, wild landscape. Hardly an individual among the whole two thousand of them had ever been out of sight of a house before in his or her life. To look out at a vast, untouched wilderness where hitherto they had seen the most highly civilized city on the globe would have been startling and depressing enough in itself, but to know that they were alone in a whole continent

of savages and that there was not, indeed, in all the world a single community of people they could greet as brothers was terrifying.

Few of them thought so far, but there was actually—if Arthur's estimate of several thousand years' drop back through time was correct—there was actually no other group of English-speaking people in the world. The English language was yet to be invented. Even Rome, the synonym for antiquity of culture, might still be an obscure village inhabited by a band of tatterdemalions under the leadership of an upstart Romulus.

Soft in body as these people were, city-bred and unaccustomed to face other than the most conventionalized emergencies of life, they were terrified. Hardly one of them had even gone without a meal in all his life. To have the prospect of having to earn their food, not by the manipulation of figures in a book, or by expert juggling of profits and prices, but by literal wresting of that food from its source in the earth or stream was a really terrifying thing for them.

In addition, every one of them was bound to the life of modern times by a hundred ties. Many of them had families, a thousand years away. All had interests, engrossing interests, in modern New York.

One young man felt an anxiety

that was really ludicrous because he had promised to take his sweetheart to the theater that night, and if he did not come, she would be very angry. Another was to be married in a week. Some of the people were, like Van Deventer and Arthur, so situated they could view the episode as an adventure, or, like Estelle, who had no immediate fear because all her family was provided for without her help and lived far from New York, so they would not learn of the catastrophe for some time. Many, however, felt instant and pressing fear for the families whose expenses ran always so close to their incomes that the disappearance of the breadwinner for a week would mean actual want or debt. There are very many such families in New York.

The people, therefore, that gathered hopelessly at the call of Van Deventer's watchmen were dazed and spiritless. Their excitement after Arthur's first attempt to explain the situation to them had evaporated. They were no longer keyed up to a high pitch by the startling thing that had happened to them.

Nevertheless, although only half comprehending what had actually occurred, they began to realize what that occurrence meant. No matter where they might go over the whole face of the globe, they would always be aliens and strangers. If they had been car-

ried away to some unknown shore, some wilderness far from their own land, they might have thought of building ships to return to their homes. They had seen New York vanish before their eyes, however. They had seen their civilization disappear while they watched.

They were in a barbarous world. There was not, for example, a single safety match on the whole earth except those in the runaway skyscraper.

A Food-Riot in the Building

Arthur and Van Deventer, in turn with the others of the cooler heads, thundered at the apathetic people, trying to waken them to the necessity for work. They showered promises of inevitable return to modern times; they pledged their honor to the belief that a way would ultimately be found by which they would all yet find themselves safely back home again.

The people, however, had seen New York disintegrate, and Arthur's explanation sounded like some wild dream of an imaginative novelist. Not one person in all the gathering could actually realize that his home might yet be waiting for him, though at the same time he felt a pathetic anxiety for the welfare of its inmates.

Every one was in a turmoil of contradictory beliefs. On the one

hand they knew that all of New York could not be actually destroyed and replaced by a splendid forest in the space of a few hours, so the accident or catastrophe must have occurred to those in the tower, and on the other hand, they had seen all of New York vanish by bits and fragments, to be replaced by a smaller and dingier town, had beheld that replaced in turn, and at last had landed in the midst of this forest.

Everyone, too, began to feel an unusual and uncomfortable sensation of hunger. It was a mild discomfort as yet, but few of them had experienced it before without an immediate prospect of assuaging the craving, and the knowledge that there was no food to be had somehow increased the desire for it. They were really in a pitiful state.

Van Deventer spoke encouragingly, and then asked for volunteers for immediate work. There was hardly any response. Everyone seemed sunk in despondency. Arthur then began to talk straight from the shoulder and succeeded in rousing them a little, but everyone was still rather too frightened to realize that work could help at all.

In desperation the dozen or so men who had gathered in Van Deventer's office went about among the gathering and simply selected men at random, ordering

them to follow and begin work. This began to awaken the crowd, but they awakened to fear rather than resolution. They were city-bred, and unaccustomed to face the unusual or the alarming.

Arthur noted the new restlessness, but attributed it to growing uneasiness rather than selfish panic. He was rather pleased that they were outgrowing their apathy. When the meeting had come to an end, he felt satisfied that by morning the latent resolution among the people would have crystallized and they would be ready to work earnestly and intelligently on whatever tasks they were directed to undertake.

He returned to the ground floor of the building feeling much more hopeful than before. Two thousand people all earnestly working for one end are hard to down even when faced with such a task as confronted the inhabitants of the runaway skyscraper. Even if they were never able to return to modern times, they would still be able to form a community that might do much to hasten the development of civilization in other parts of the world.

His hope received a rude shock when he reached the great hallway on the lower floor. There was a fruit and confectionary stand here, and as Arthur arrived at the spot, he saw a surging mass of men about it. The keeper of

the stand looked frightened, but was selling off his stock as fast as he could make change. Arthur forced his way to the counter.

"Here," he said sharply to the keeper of the stand, "stop selling this stuff. It's got to be held until we can dole it out where it's needed."

"I—I can't help myself," the keeper said. "They're takin' it anyway."

"Get back there," Arthur cried to the crowd. "Do you call this decent, trying to get more than your share of this stuff? You'll get your portion tomorrow. It is going to be divided up."

"Go to hell!" someone panted. "You c'n starve if you want to, but I'm goin' to look out f'r myself."

The men were not really starving, but had been put into a panic by the plain speeches of Arthur and his helpers, and were seizing what edibles they could lay hands upon in preparation for the hunger they had been warned to expect.

Arthur pushed against the mob, trying to thrust them away from the counter, but his very effort intensified their panic. There was a quick surge and a crash. The glass front of the showcase broke in.

In a flash of rage Arthur struck out viciously. The crowd paid not the slightest attention to him, however. Every man was too pan-

ic-stricken, and too intent on getting some of this food before it was all gone, to bother with him.

Arthur was simply crushed back by the bodies of the forty or fifty men. In a moment he found himself alone amid the wreckage of the stand, with the keeper wringing his hands over the remnants of his goods.

Van Deventer ran down the stairs.

"What's the matter?" he demanded as he saw Arthur nursing a bleeding hand cut on the broken glass of the showcase.

"Bolsheviki!" answered Arthur with a grim smile. "We woke up some of the crowd too successfully. They got panic-stricken and started to buy out this stuff here. I tried to stop them, and you see what happened. We'd better look to the restaurant, though I doubt if they'll try anything just now."

He followed Van Deventer up to the restaurant floor. There were picked men before the door, but just as Arthur and the bank president appeared two or three white-faced men went up to the guards and started low-voiced conversations.

Arthur reached the spot in time to forestall bribery.

Arthur collared one man, Van Deventer another, and in a moment the two were sent reeling down the hallway.

"Some fools have got panic-

stricken!" Van Deventer explained to the men before the doors in a casual voice, though he was breathing heavily from the unaccustomed exertion. "They've smashed the fruitstand on the ground floor and stolen the contents. It's nothing but blue funk! Only, if any of them start to gather around here, hit them first and talk it over afterward. You'll do that?"

"We will!" the men said heartily.

"Shall we use our guns?" asked another hopefully.

Van Deventer grinned.

"No," he replied, "we haven't any excuse for that yet. But you might shoot at the ceiling, if they get excited. They're just frightened!"

He took Arthur's arm, and the two walked toward the stairway again.

"Chamberlain," he said happily, quickening his pace, "tell me why I've never had as much fun as this before!"

Arthur smiled a bit wearily.

"I'm glad you're enjoying yourself!" he said. "Because I'm not. I'm going outside and walk around a bit. I want to see if any cracks have appeared in the earth anywhere. It's dark, and I'll borrow a lantern down in the fire-room, but I want to find out if there are any more developments in the condition of the building."

Theorizing on the Strange Occurrence

Despite his preoccupation with his errand, which was to find if there were other signs of the continued activity of the strange forces that had lowered the tower through the Fourth Dimension into the dim and unrecorded years or aboriginal America, Arthur could not escape the fascination of the sight that met his eyes. A bright moon shone overhead and silvered the white sides of the tower, while the brightly-lighted windows of the offices within glittered like jewels set into the shining shaft.

From his position on the ground he looked into the dimness of the forest on all sides. Black obscurity had gathered beneath the dark masses of moonlit foliage. The tiny birch-bark teepees of the now deserted Indian village glowed palely. Above the stars looked calmly down at the accusing finger of the tower pointing upward, as if in reproach at their indifference to the savagery that reigned over the whole earth.

Like a fairy tower of jewels the building rose. Alone among a wilderness of trees and streams it towered in a strange beauty; moonlit to silver, lighted from within to a mass of brilliant gems, it stood serenely still.

Arthur, carrying his futile lan-

tern about its base, felt his own insignificance as never before. He wondered what the Indians must think. He knew there must be hundreds of eyes fixed upon the strange sight—fixed in awe-stricken terror or superstitious reverence upon this unearthly visitor to their hunting grounds.

A tiny figure, dwarfed by the building whose base he skirted, Arthur moved slowly about the vast pile. The earth seemed not to have been affected by the vast weight of the tower.

Arthur knew, however, that long concrete piles reached far down to bedrock. It was these piles that had sunk into the Fourth Dimension, carrying the building with them.

Arthur had followed the plans with great interest when the Metropolitan was constructed. It was an engineering feat, and in the engineering periodicals, whose study was part of Arthur's business, great space had been given to the building and the methods of its construction.

While examining the earth carefully he went over his theory of the cause for the catastrophe. The whole structure must have sunk at the same time, or it, too, would have disintegrated, as the other buildings had appeared to disintegrate. Mentally, Arthur likened the submergence of the tower in the oceans of time to an elevator sinking past the different floors

of an office building. All about the building the other skyscrapers of New York had seemed to vanish. In an elevator, the floors one passes seem to rise up.

Carrying out the analogy to its logical end, Arthur reasoned that the building itself had no more cause to disintegrate, as the buildings it passed seemed to disintegrate, than the elevator in the office building would have cause to rise because its surroundings seemed to rise.

Within the building, he knew, there were strange stirrings of emotions. Queer currents of panic were running about, throwing the people to and fro as leaves are thrown about by a current of wind. Yet, underneath all those undercurrents of fear was a rapidly growing resolution, strengthened by an increasing knowledge of the need to work.

Men were busy even then shifting all possible comfortable furniture to a single story for the women in the building to occupy. The men would sleep on the floor for the present. Beds of boughs could be improvised on the morrow. At sunrise on the following morning many men would go to the streams to fish, guarded by other men. All would be frightened, no doubt, but there would be a grim resolution underneath the fear. Other men would wander about to hunt.

There was little likelihood of

Indians approaching for some days, at least, but when they did come Arthur meant to avoid hostilities by all possible means. The Indians would be fearful of their strange visitors, and it should not be difficult to convince them that friendliness was safest, even if they displayed unfriendly desires.

The pressing problem was food. There were two thousand people in the building, soft-bodied and city-bred. They were unaccustomed to hardship, and could not endure what more primitive people would hardly have noticed.

They must be fed, but they must be taught to feed themselves. The fishermen would help, but Arthur could only hope that they would prove equal to the occasion. He did not know what to expect from them. From the hunters he expected but little. The Indians were wary hunters, and game would be shy if not scarce.

The great cloud of birds he had seen at sunset was a hopeful sign. Arthur vaguely remembered stories of great flocks of wood-pigeons which had been exterminated, as the buffalo was exterminated. As he considered, the remembrance became more clear.

They had flown in huge flocks which nearly darkened the sky. As late as the forties of the nineteenth century they had been an important article of food, and had

glutted the market at certain seasons of the year.

Estelle had said the birds he had seen at sunset were pigeons. Perhaps this was one of the great flocks. If it were really so, the food problem would be much lessened, provided a way could be found to secure them. The ammunition in the tower was very limited, and a shell could not be found for every bird that was needed, nor even for every three or four. Great traps must be devised, or bird-lime might possibly be produced. Arthur made a mental note to ask Estelle if she knew anything of bird-lime.

A vague, humming roar, altering in pitch, came to his ears. He listened for some time before he identified it as the sound of the wind playing upon the irregular surfaces of the tower. In the city the sound was drowned by the multitude of other noises, but here Arthur could hear it plainly.

He listened a moment, and became surprised at the number of night noises he could hear. In New York he had closed his ears to incidental sounds from sheer self-protection. Somewhere he heard the ripple of a little spring. As the idea of a spring came into his mind, he remembered Estelle's description of the deep-toned roar she had heard.

He put his hand on the cold stone of the building. There was

but was still noticeable. He drew back from the rock and looked up into the sky. It seemed to blaze with stars, more stars than Arthur had ever seen in the city, and more than he had dreamed existed. city, and more than he had dreamed existed.

As he looked, however, a cloud seemed to film a portion of the heavens. The stars still showed through it, but they twinkled in a peculiar fashion that Arthur could not understand.

He watched in growing perplexity. The cloud moved very swiftly. Thin as it seemed to be, it should have been silvery from the moonlight, but the sky was noticeably darker where it moved. It advanced toward the tower and seemed to obscure the upper portion. A confused motion became visible among its parts. Wisps of it whirled away from the brilliantly lighted tower, and then returned swiftly toward it.

Arthur heard a faint tinkle, then a musical scraping, which became louder. A faint scream sounded, then another. The tinkle developed into the sound made by breaking glass, and the scraping sound became that of the broken fragments as they rubbed against the sides of the tower in their fall.

The scream came again. It was the frightened cry of a woman. A soft body struck the earth not ten feet from where Arthur stood, then another, and another.

Arthur and Estelle in Conference Again

Arthur urged the elevator boy to greater speed. They were speeding up the shaft as rapidly as possible, but it was not fast enough. When they at last reached the height at which the excitement seemed to be centered, the car stopped with a jerk and Arthur dashed down the hall.

Half a dozen frightened stenographers stood there, huddled together.

"What's the matter?" Arthur demanded. Men were running from the other floors to see what the trouble was.

"The—the windows broke, and—and something flew in at us!" one of them gasped. There was a crash inside the nearest office, and the women screamed again.

Arthur drew a revolver from his pocket and advanced to the door. He quickly threw it open, entered, and closed it behind him. Those left out in the hall waited tensely.

There was no sound. The women began to look even more frightened. The men shuffled their feet uneasily, and looked uncomfortably at one another. Van Deventer appeared on the scene, puffing a little from his haste.

The door opened again and Arthur came out. He was carry-

ing something in his hand. He had put his revolver aside and looked somewhat foolish but very much delighted.

"The food question is settled," he said happily. "Look!"

He held out the object he carried. It was a bird, apparently a pigeon of some sort. It seemed to have been stunned, but as Arthur held it out it stirred, then struggled, and in a moment was flapping wildly in an attempt to escape.

"It's a wood-pigeon," said Arthur. "They must fly after dark sometimes. A big flock of them ran afoul of the tower and were dazed by the lights. They've broken a lot of windows, I dare say, but a great many of them ran into the stonework and were stunned. I was outside the tower, and when I came in, they were dropping to the ground by hundreds. I didn't know what they were then, but if we wait twenty minutes or so I think we can go out and gather up our supper and breakfast and several other meals, all at once."

Estelle had appeared and now reached out her hands for the bird.

"I'll take care of this one," she said. "Wouldn't it be a good idea to see if there aren't some more stunned in the other offices?"

In half an hour the electric stoves of the restaurant were going at their full capacity. Men,

cheerfully excited men now, were bringing in pigeons by armfuls, and other men were skinning them. There was no time to pluck them, though a great many of the women were busily engaged in that occupation.

As fast as the birds could be cooked they were served out to the impatient but much cheered castaways, and in a little while nearly every person in the place was walking casually about the halls with a roasted, broiled, or fried pigeon in his hands. The ovens were roasting pigeons, the frying-pans were frying them, and the broilers were loaded down with the small but tender birds.

The unexpected solution of the most pressing question cheered every one amazingly. Many people were still frightened, but less frightened than before. Worry for their families still oppressed a great many, but the removal of the fear of immediate hunger led them to believe that the other problems before them would be solved, too, and in as satisfactory a manner.

Arthur had returned to his office with four broiled pigeons in a sheet of wrapping-paper. As he somehow expected, Estelle was waiting there.

"Thought I'd bring lunch up," he announced. "Are you hungry?"

"Starving!" Estelle replied, and laughed.

The whole catastrophe began to become an adventure. She bit eagerly into the bird. Arthur began as hungrily on another. For some time neither spoke a word. At last, however, Arthur waved the leg of his second pigeon toward his desk.

"Look what we've got here!" he said.

Estelle nodded. The stunned pigeon Arthur had first picked up was tied by one foot to a paper-weight.

"I thought we might keep him for a souvenir," she suggested.

"You seem pretty confident we'll get back, all right," Arthur observed. "It was surely lucky those blessed birds came along. They've heartened up the people wonderfully!"

"Oh, I knew you'd manage somehow!" said Estelle confidently.

"I manage?" Arthur repeated, smiling. "What have I done?"

"Why, you've done everything," affirmed Estelle stoutly. "You've told the people what to do from the very first, and you're going to get us back."

Arthur grinned, then suddenly his face grew a little more serious.

"I wish I were as sure as you are," he said. "I think we'll be all right, though, sooner or later."

"I'm sure of it," Estelle declared with conviction. "Why, you—"

"Why I?" asked Arthur again.

He bent forward in his chair and fixed his eyes on Estelle's. She looked up, met his gaze and stammered:

"You—you do things," she finished lamely.

"I'm tempted to do something now," Arthur said. "Look here, Miss Woodward, you've been in my employ for three or four months. In all that time I've never had anything but the most impersonal comments from you. Why the sudden change?"

The twinkle in his eyes robbed his words of any impertinence.

"Why, I really—I really suppose I never noticed you before," said Estelle.

"Please notice me hereafter," said Arthur. "I have been noticing you. I've been doing practically nothing else."

Estelle flushed again. She tried to meet Arthur's eyes and failed. She bit desperately into her pigeon drumstick, trying to think of something to say.

"When we get back," went on Arthur meditatively, "I'll have nothing to do—no work or anything. I'll be broke and out of a job."

Estelle shook her head emphatically. Arthur paid no attention.

"Estelle," he said, smiling, "would you like to be out of a job with me?"

Estelle turned crimson.

"I'm not very successful," Arthur went on soberly. "I'm afraid

I wouldn't make a very good husband, I'm rather worthless and lazy!"

"You aren't," broke in Estelle; "you're—you're—"

Arthur reached over and took her by the shoulders.

"What?" he demanded.

She would not look at him, but she did not draw away. He held her from him for a moment.

"What am I?" he demanded again. Somehow he found himself kissing the tips of her ears. Her face was buried against his shoulder.

"What am I?" he repeated sternly.

Her voice was muffled by his coat.

"You're—you're dear!" she said.

There was an interlude of about a minute and a half, then she pushed him away from her.

"Don't!" she said breathlessly. "Please don't!"

"Aren't you going to marry me?" he demanded.

Still crimson, she nodded shyly. He kissed her again.

"Please don't!" she protested.

She fondled the lapels of his coat, quite content to have his arms about her.

"Why mayn't I kiss you if you're going to marry me?" Arthur demanded.

She looked up at him with an air of demure primness.

"You—you've been eating pi-

geon," she told him in mock gravity, "and—and your mouth is greasy!"

A Geyser Effects a Happy Return

It was two weeks later. Estelle looked out over the now familiar wild landscape. It was much the same when she looked far away, but nearby there were great changes.

A cleared trail led through the woods to the waterfront, and a raft of logs extended out into the river for hundreds of feet. Both sides of the raft were lined with busy fishermen—men and women, too. A little to the north of the base of the building a huge mound of earth smoked sullenly. The coal in the cellar had given out and charcoal had been found to be the best substitute they could improvise. The mound was where the charcoal was made.

It was heartbreaking work to keep the fires going with charcoal, because it burned so rapidly in the powerful draft of the furnaces, but the original fire-room gang had been recruited to several times its original number from among the towerites, and the work was divided until it did not seem hard.

As Estelle looked down, two tiny figures sauntered across the clearing from the woods with a heavy animal slung between

them. One was using a gun as a walking-stick. Estelle saw the flash of the sun on its polished barrel.

There were a number of Indians in the clearing, watching with wide-open eyes the activities of the whites. Dozens of birch-bark canoes dotted the Hudson, each with its load of fishermen, industriously working for the white people. It had been hard to overcome the fear in the Indians, and they still paid superstitious reverence to the whites, but fair dealings, coupled with a constant readiness to defend themselves, had enabled Arthur to institute a system of trading for food that had so far proved satisfactory.

The whites had found spare electric-light bulbs valuable currency in dealing with the redmen. Picture-wire, too, was highly prized. There was not a picture left hanging in any of the offices. Metal paper-knives bought huge quantities of provisions from the eager Indian traders, and the story was current in the tower that Arthur had received eight canoe-loads of corn and vegetables in exchange for a broken-down typewriter. No one could guess what the savages wanted with the typewriter, but they had carted it away triumphantly.

Estelle smiled tenderly to herself as she remembered how Arthur had been the leading spirit

in all the numberless enterprises in which the castaways had been forced to engage. He would come to her in a spare ten minutes, and tell her how everything was going. He seemed curiously boy-like in those moments.

Sometimes he would come straight from the fire-room—he insisted on taking part in all the more arduous duties—having hastily cleaned himself for her inspection, snatch a hurried kiss and then go off, laughing to help chop down trees for the long fishing-raft. He had told them how to make charcoal, had taken a leading part in establishing and maintaining friendly relations with the Indians, and was now down in the deepest sub-basement, working with a gang of volunteers to try to put the building back where it belonged.

Estelle had said, after the collapse of the flooring in the board-room, that she heard a sound like the rushing of waters. Arthur, on examining the floor where the safe-deposit vault stood, found it had risen an inch. On these facts he had built up his theory. The building, like all modern skyscrapers, rested on concrete piles extending down to bedrock. In the center of one of those piles there was a hollow tube originally intended to serve as an artesian well. The flow had been insufficient and the well had been stopped up.

Arthur, of course, as an engineer, had studied the construction of the building with great care, and happened to remember that this partly hollow pile was the one nearest the safe-deposit vault. The collapse of the board-room floor had suggested that some change had happened in the building itself, and that was found when he saw that the deposit-vault had actually risen an inch.

He at once connected the rise in the flooring above the hollow pile with the pipe in the pile. Estelle had heard liquid sounds. Evidently water had been forced into the hollow artesian pipe under an unthinkable pressure when the catastrophe occurred.

From the rumbling and the suddenness of the whole catastrophe, a volcanic or seismic disturbance was evident. The connection of volcanic or seismic action with a flow of water suggested a geyser or a hot spring of some sort, probably a spring which had broken through its normal confines sometime before, but whose pressure had been sufficient to prevent the accident until the failure of its flow.

When the flow ceased the building sank rapidly. For the fact that this "sinking" was in the fourth direction—the Fourth Dimension—Arthur had no explanation. He simply knew that in some mysterious way an outlet for the pressure had developed in that

fashion, and that the tower had followed the spring in its fall through time.

The sole apparent change in the building had occurred above the one hollow concrete pile, which seemed to indicate that if access were to be had to the mysterious, and so far only assumed spring, it must be through that pile. While the vault retained its abnormal elevation, Arthur believed that there was still water at an immense and incalculable pressure in the pipe. He dared not attempt to tap the pipe until the pressure had abated.

At the end of the week he found the vault slowly settling back into place. When its return to the normal was complete, he dared begin boring a hole to reach the hollow tube in the concrete pile.

As he suspected, he found water in the pile—water whose sulfurous and mineral nature confirmed his belief that a geyser reaching deep into the bosom of the earth, as well as far back in the realms of time, was at the bottom of the extraordinary jaunt of the tower.

Gysers were still far from satisfactory things to explain. There are many of their vagaries which we cannot understand at all. We do know a few things which affect them, and one thing is that "soaping" them will stimulate their flow in an extraordinary manner.

Arthur proposed to "soap" this mysterious geyser when the renewal of its flow should lift the runaway skyscraper back to the epoch from which the failure of the flow had caused it to fall.

He made his preparations with great care. He confidently expected his plan to work, and to see the skyscraper once more towering over mid-town New York as was its wont, but he did not allow the fishermen and hunters to relax their efforts on that account. They labored as before, while deep down in the sub-basement of the colossal building Arthur and his volunteers toiled mightily.

They had to bore through the concrete pile until they reached the hollow within it. Then, when the evidence gained from the water in the pipe had confirmed his surmises, they had to prepare their "charge" of soapy liquids by which the geyser was to be stirred to renewed activity.

Great quantities of the soap used by the scrub-women in scrubbing down the floors were boiled with water until a sirupy mess was evolved. Means had then to be provided by which this could be quickly introduced into the hollow pile, the hole then closed, and then braced to withstand a pressure unparalleled in hydraulic science. Arthur believed that from the hollow pile the soapy liquid would find its

way to the geyser proper, where it would take effect instimulating the lessened flow to its former proportions. When they took place he believed that the building would return to normal, modern times, as swiftly and as surely as it had left them.

The telephone rang in his office, and Estelle answered it. Arthur was on the wire. A signal was being hung out for all the castaways to return to the building from their several occupations. They were about to soap the geyser.

Did Estelle want to come down and watch? She did! She stood in the main hallway as the excited and hopeful people trooped in. When the last was inside, the doors were firmly closed. The few friendly Indians outside stared perplexedly at the mysterious white strangers. The whites, laughing excitedly, began to wave to the Indians. Their leave-taking was premature.

Estelle took her way down into the cellar. Arthur was awaiting her arrival. Van Deventer stood near, with the grinning, grimy members of Arthur's volunteer work gang. The massive concrete pile stood in the center of the cellar. A big steam-boiler was coupled to a tiny pipe that led into the heart of the mass of concrete. Arthur was going to force the soapy liquid into the hollow pile by steam.

At the signal steam began to hiss in the boiler. Live steam from the fire-room forced the soapy sirup out of the boiler, through the small iron pipe, into the hollow that led to the geyser far underground. Six thousand gallons in all were forced into the opening in a space of three minutes. Arthur's grimy gang began to work with desperate haste. Quickly they withdrew the iron pipe and inserted a long steel plug, painfully beaten from a bar of solid metal. Then, girding the colossal concrete pile, ring after ring of metal was slipped on, to hold the plug in place.

The last of the safeguards was hardly fastened firmly when Estelle listened intently. "I hear a rumbling!" she said quietly.

Arthur reached forward and put his hand on the mass of concrete.

"It is quivering!" he reported as quietly. "I think we'll be on our way in a very little while."

The group broke for the stairs, to watch the panorama as the runaway skyscraper made its way back through the thousands of years to the times that had built it for a monument to modern commerce. Arthur and Estelle went high up in the tower. From the window of Arthur's office they looked eagerly, and felt the slight quiver as the tower got under way. Estelle looked up at the sun, and saw it mend its pace toward the west.

Night fell. The evening sounds became highpitched and shrill, then seemed to cease altogether.

In a very little while there was light again, and the sun was speeding across the sky. It sank hastily, and returned almost immediately, *via* the east. Its pace became a breakneck rush. Down behind the hills and up in the east. Down in the west and up in the East. Down and up—The flickering began. The race back toward modern time had started.

Arthur and Estelle stood at the window and looked out as the sun rushed more and more rapidly across the sky until it became a streak of light, shifting first to the right and then to the left as the seasons passed in their turn.

With Arthur's arms about her shoulders, Estelle stared out across the unbelievable landscape, while the nights and days, the winters and summers, and the storms and calms of a thousand years swept past them into the irrevocable aeons.

Presently Arthur drew her to him and kissed her. While he kissed her, so swiftly did the days and years flee by, three generations were born, grew and begot children, and died again! Estelle, held fast in Arthur's arms, thought nothing of such trivial things. She put her arms about his neck and kissed him, while the years passed them unheeded.

Of course you know that the

building landed safely, in the exact hour, minute, and second from which it started, so that when the frightened and excited people poured out of it to stand in Madison Square and feel that the world was once more right side up, their hilarious and incomprehensible conduct made such of the world as was passing by to think a contagious madness had broken out.

Days passed before the story of the two thousand was believed, but at last it was accepted as truth, and eminent scientists studied the matter exhaustively.

There has been one rather queer result of the journey of the runaway skyscraper. A certain Isidore Eckstein, a dealer in jewelry novelties, whose office was in the tower when it disappeared into the past, has entered suit in the courts of the United States against all holders of land on Manhattan Island. It seems that during the two weeks in which the tower rested in the wilderness he traded independently with one of the Indian chiefs, and in exchange for two near-pearly necklaces, sixteen finger-rings, and one dollar in money, received a title-deed to the entire island. He claims that his deed is a conveyance made previous to all other sales whatever.

Strictly speaking, he is undoubtedly right, as his deed was signed before the discovery of

America. The courts, however, are deliberating the question with a great deal of perplexity.

Eckstein is quite confident that in the end his claim will be allowed and he will be admitted as the sole owner of real estate on Manhattan Island, with all occupiers of building and territory paying his ground-rent at a rate he will fix himself. In the meantime, though the foundations are being reinforced so the catastrophe cannot occur again, his entire office is packed full of articles suitable for trading with the Indians. If the tower makes another trip back through time, Eckstein hopes to become a landholder of some importance.

No less than eighty-seven books have been written by members of the memorable two thousand in description of their trip to the hinterland of time, but Arthur, who could write more intelligently about the matter than anyone else, is too busy to bother with such things. He has two very important matters to look after. One is, of course, the reinforcement of the foundations of the building so that a repetition of the catastrophe cannot occur, and the other is to convince his wife—who is Estelle, naturally—that she is the most adorable person in the universe. He finds the latter task the more difficult, because she insists that *he* is the most adorable person—THE END

Many of you probably know Otis Adelbert Kline best for his adventure novels set on Venus and Mars—especially The Planet of Peril and The Swordsman of Mars—which Ace Books has been bringing back for a newer generation of readers. But some of you old-timers out there probably remember that long before he was caught up in that famous literary rivalry with Edgar Rice Burroughs, Kline was writing very popular stories for the old Weird Tales and for the early years of Amazing, the first of which, "The Malignant Entity," is still a shocker. It begins with a famous scientist trying to create life out of "inert matter," but apparently he was too successful—because one morning he's found dead on the floor of his laboratory, fully clothed, yes, but without an ounce of flesh or a drop of blood on his dry white bones!

THE MALIGNANT ENTITY

By OTIS ADELBERT KLINE

Illustrator: MOREY

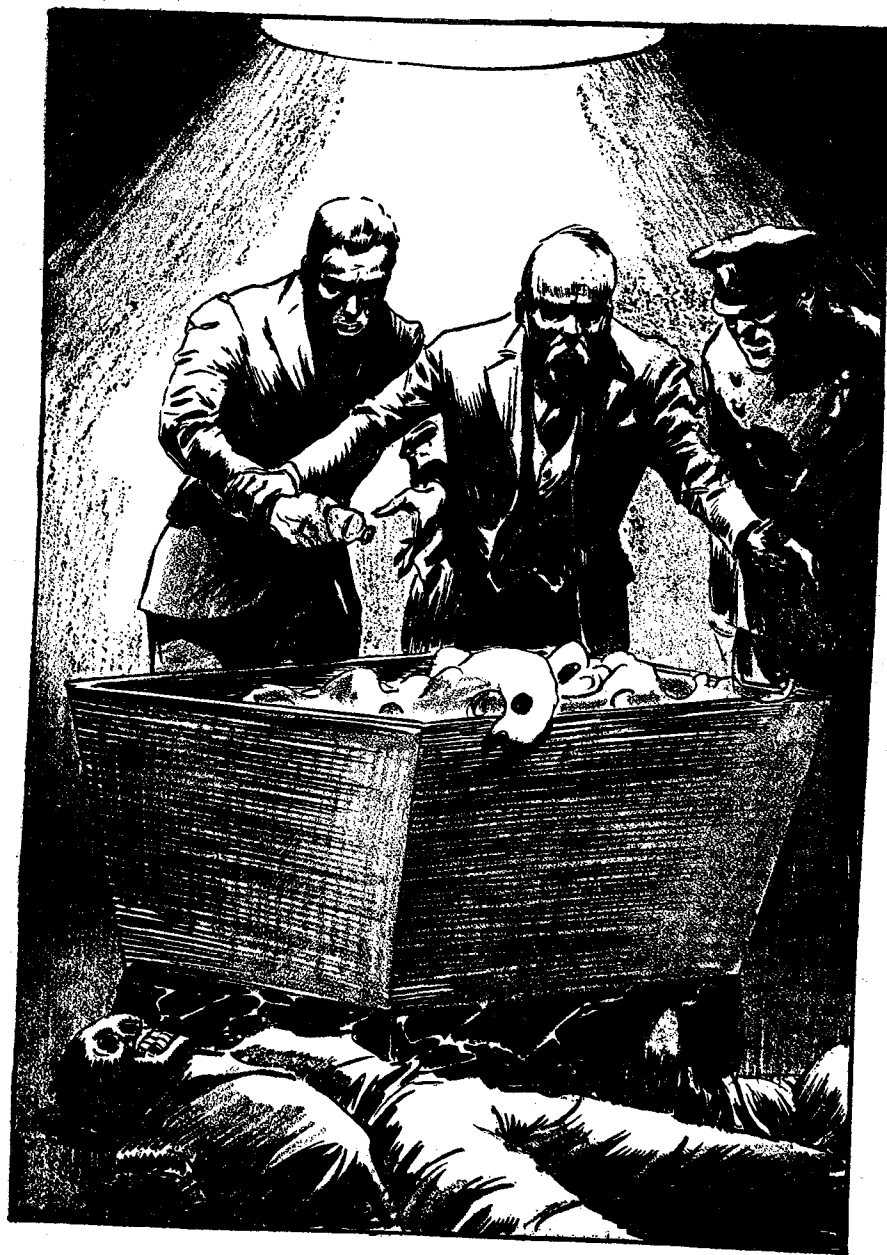
Itell you, Evans," said Dr. Dorp, banging his fist on the arm of his chair for emphasis, "the science of psychology is in much the same stage of development today as were the material sciences in the dark ages."

"But surely," I objected, "the two centuries of investigation just past have yielded some fruit. It cannot be that the eminent men who have devoted the greater part of their lives to this fascinating subject have labored in vain."

The doctor stroked his iron-gray Van Dyke meditatively.

"With a few—a very few exceptions, I'm afraid they have," he replied, "at least so far as their own deductions from observed phenomena are concerned."

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"Take Sir Oliver Lodge, for example—" I began.

"The conclusions of Sir Oliver will serve as an excellent example for my analogy," said the doctor. "No doubt you are familiar with the results of his years of painstaking psychical research as expounded in his books."

"I believe he has become a convert to spiritism," I replied.

"With all due respect to Sir Oliver," said the doctor, "I should say that he has rather singled out such facts as suited his purpose and assembled them as evidence to support the spiritistic theory. It may seem paradoxical to add that I believe he has always been thoroughly conscientious in his investigation and sincere in his deductions."

"I'm afraid I do not quite follow you."

"There are times in the life of every man," continued the doctor, "when emotion dethrones reason. At such crises the most keen-witted of scientists may be blinded to truth by the overpowering influence of his own desires. Sir Oliver lost a beloved son. Only those who have suffered similar losses can appreciate the keen anguish that followed his bereavement, or sympathize with his intense longing to communicate with Raymond. Most men are creatures of their

desires. They believe what they want to believe. Under the circumstance it was not difficult for a clever psychic to read the mind of the scientist and tell him the things he wanted to hear."

"But what of the many investigators who have not been similarly influenced?" I inquired. "Surely they must have found some basis—"

I was interrupted by the entrance of the doctor's housekeeper who announced—

"Beggin' your pardon, sir, a gentleman to see you, sir."

"Show him in," Dr. Dorp said rather petulantly.

His frown of annoyance changed to a welcoming smile of recognition at sight of the tall, bulky individual who strode through the doorway.

"How are you, Doc," roared the big man as they shook hands cordially. "Haven't bothered you for a long time, have I? Got a case for you now that will make you put on your thinking cap all right."

"Sounds interesting," replied the doctor. "Let me present my old friend, Mr. Evans, who writes a story now and then when the spirit moves him. Mr. Evans, Chief McGraw of the detective bureau. We were just discussing our mutual hobby, psychic phenomena, when you came in," he continued after we had acknowledged the introduction.

"No doubt Chief McGraw's communication is of a confidential nature—" I began with the purpose of taking leave of my host.

"Nothing secret about it so far as Dr. Dorp and his friends are concerned," interrupted the chief. "It may be that if you are a psychologist you can offer some solution of the mystery. Of course, I don't exactly know whether it's a case for a psychologist or not. Damned curious thing, and ghastly too."

"Stay and listen if you are interested," said the doctor.

"If it has any smattering of psychology or the occult, you know my failing," I responded.

"Can't say as to that," said the chief. "It's queer enough, though—and horrible. You gentlemen have heard of Professor Townsend, I presume."

"You mean Albert Townsend, the chemist and inventor?" asked the doctor. "Assuredly. Who hasn't heard of him and his queer theories about creating life from inert matter? What has he done now?"

"I don't know whether it's something he did or something that was done to him, but anyway he's dead."

"Murdered?"

"That's the point I want you to help me clear up. I don't know. His daughter 'phoned the office this morning and asked for me.

When I got on the wire I could hardly understand her, she was so hysterical. Sobbed out something about her father being gone and a human skeleton lying on the floor of his laboratory. I jumped in the car and took Hirsch, the fingerprint expert, out there with me. We found the frightened girl weeping in the arms of a motherly neighbor, who informed us that the laboratory was on the second floor.

"The whitened skeleton of Professor Townsend, fully clothed in garments that hung like a rags on a scarecrow, lay on the floor of the laboratory."

"You made sure of course, that it really was the skeleton of the Professor."

"Beyond the least shadow of doubt. In the first place it was clothed in the professor's garments. His watch with his name in the back was ticking in the vest pocket. His monogrammed ring, a present from his daughter, circled a bony finger. On the bones of his right forearm were the marks of a fracture that had healed, and the skull was slightly indented above the right temple. These marks resulted from an automobile accident in which the professor was injured two years ago. To make assurance doubly sure, we called in his dentist who readily identified his own work on the teeth."

"When was the professor last seen alive?"

"That is the feature that makes the affair so uncanny. He was alive, and apparently normal mentally and physically, at dinner last evening."

"Most amazing!" exclaimed Dr. Dorp. "Suppose we go out—"

"Just what I was going to suggest," replied the chief. "My car is waiting outside. Would you care to accompany us, Mr. Evans?"

"He would perish from curiosity if he couldn't see the thing through now," said the doctor when I hesitated. "Come along with us, old man. If two minds are better than one, then surely three minds are superior to two."

We piled into the chief's roomy roadster and were soon speeding toward the house of mystery.

Two Mysterious Deaths

Presently the car stopped before a two-story brick house. Its upper windows, with shades half drawn, appeared to stare down at us with a look of sly cunning as if endeavoring to conceal some fearful secret.

A short chunky individual, smooth-faced and with a decidedly florid complexion, met us at the door. Chief McGraw introduced him as Hirsch, the fingerprint expert.

"All alone, Hirsch?" asked the chief, looking about as we entered the spacious living room.

"Might as well be," replied Hirsch. "Miss Townsend is in her room with a neighbor. The cook and housemaid are out in the kitchen, scared green."

"Coroner been here?"

"No. He called me up about twenty minutes ago and said he had an inquest to attend to on the south side. Told me he didn't know how soon he could get here, but it would be several hours, at least."

"How about the prints?"

"All the fingerprints in the laboratory seem to have been made by the same person, evidently the professor."

"Hum. Better phone headquarters right away and have them send Rooney out. He might come in handy to guard the death room in case the coroner is late."

"All right, sir. I'll call up right away."

"Now gentlemen," said the chief, turning to the doctor and me, "let us go upstairs."

We followed him up the thickly carpeted stairway and along a broad corridor at the end of which he opened a door.

I started involuntarily at sight of the grinning, ghastly thing that lay on the floor. Not so Dr. Dorp. He knelt beside it and examined it minutely, his keen gray eyes alert for every detail.

He even touched his fingers to the white forehead and prodded the shadowy depths of the empty eye sockets.

At length he rose and washed his hands at the porcelain lavatory.

"It seems incredible," he said, "that this man could have been alive yesterday."

"Just what I was thinking," responded the chief. "Those bones could not have been drier or whiter if they had bleached in the sunlight for the last ten years."

The doctor now turned his attention to the contents of the laboratory. He examined the collection of retorts, test tubes, beakers, jars, dishes and other paraphernalia spread on a porcelain-topped table set against the wall and reaching half the length of the room. The walls were shelved clear to the ceiling, and every shelf was crowded to its utmost capacity with bottles, jars and cans containing a multitude of chemicals. To these he gave but scant attention.

In the center of the immaculate white tile floor stood an open, glass-lined vat. From its height and diameter I estimated its capacity at about sixty gallons. It was more than a third full of a colorless, viscous liquid that gave off a queer, musty odor.

"What do you suppose that stuff is?" I asked Dr. Dorp.

"Looks like a heavy albuminous or gelatinous solution," he said. "Possibly it is some special compound the professor employed in his experiments. Mediums of this nature are often used in the cultivation of colonies of bacteria, and it is possible that he intended to use it as a carrier and food for the organisms it was his ambition to create synthetically."

"Any idea what caused the death of the professor?" asked the chief.

"I have a theory," replied Dr. Dorp, "but it seems so illogical, so wildly impossible, so—er, contrary to the teachings of science that I prefer to keep it to myself for the present, at least."

A heavy tread sounded in the hallway and a moment later a blue-uniformed officer entered.

"Hello, Rooney," greeted Chief McGraw. "I want you to see that no one disturbs this room or its contents until the coroner arrives. We are going downstairs now. Keep a weather eye on things and I'll send a man to relieve you soon. If either of these gentlemen wants to come in at any time, you may admit him.

"Yes, sir. I'll remember them."

We trooped downstairs. Two women were seated in the living room. Chief McGraw presented us to the younger, who proved to be the professor's daughter,

Dorothy Townsend. She was a slender girl, about twenty years of age with pale, regular features and a wealth of gold-brown hair. Her large, expressive eyes were red with recent weeping, and her lips quivered slightly as she bowed to us in turn and introduced us to the stout, middle-aged neighbor, Mrs. Harms, who had been endeavoring to comfort her.

"Hirsch and I are going to run down to headquarters for a couple of hours," said the chief. "Would you prefer to come with us or stay here and look around?"

"I think we had better look around a bit if you don't mind," replied the doctor.

"All right. I'm going to send a man to relieve Rooney at six. Will be along myself a little later. If you discover anything new, call me up."

When the two men were gone, the doctor bowed before Miss Townsend.

"May I have a few words with you in private?" he asked.

"Certainly," she replied, rising. "In Father's study if you wish."

They entered the study, which was directly off the living room, and closed the door. They must have been gone about a half hour, but it seemed like two hours to me as, fidgeting inwardly, I listened to Mrs. Harms' family history, her account of the death of her beloved husband,

and minute descriptions of six operations she had undergone, each time, to use her own expression, "standing at the entrance of death's door." She assured me, also, that she knew what it was to have death in the home. The Grim Reaper had visited her family a score of times, she averred, and only three weeks before, one of her roomers had been found dead in bed.

She prattled on with scarce a pause until the door of the study opened. I was glad when she went upstairs with Miss Townsend and left Dr. Dorp and me together.

"Come into the study," he said. "I have learned some interesting things, and it is possible that more awaits us in here."

Professor Townsend's study was neither large nor pretentious. It was obviously the retreat of a profound student, as was attested by the book-lined walls, many of the volumes of which were worn with much handling. The furniture consisted of a large, roll-top desk, a smaller typewriter desk on which stood a hooded machine, a filing cabinet, two office chairs and three comfortable, overstuffed chairs, one beside the window, the other two placed conveniently under wall lights for reading.

A thick pile of typewritten manuscripts lay on the roll-top desk.

The doctor divided them, handing me half and settling himself comfortably in one of the overstuffed chairs with the other half.

"Miss Townsend kindly brought these out of the files for me," explained the doctor. "I think it possible that they may shed some light on the mysterious cause of the death of their author. We can save time dividing the work."

"I believe I can conduct a more intelligent search if you will give me some idea of what I am to look for," I said.

"Quite so," he agreed. "I had forgotten for the moment that you were not familiar with the details of my interview with Miss Townsend. Let me review it briefly.

"She finished school nearly a year ago, and since that time has been acting as her father's secretary, typing his manuscripts and attending to much of his voluminous correspondence.

"He had been working day and night in his effort to prove his theory that a living organism can be created from inorganic matter. During their months of close association she found him extremely irritable until one morning about three weeks ago. It appeared that his very nature had changed overnight, and she assumed that he had made some important discovery. She remembers the exact date owing to the

fact that Mrs. Harms' roomer was found dead in bed on the night of the supposed discovery. This roomer, who was living under an alias, was found to be a notorious character known as Immune Benny, and is alleged to have committed numerous crimes, among which were several revolting murders, without ever having been convicted.

"After that night the professor's jubilant attitude kept up until his death. He paid no attention to his correspondence or manuscripts and spent the greater part of his time in his laboratory, presumably experimenting with numerous live animals which he had delivered each day. His first experiments, she stated, were with mice, rats and guinea pigs. He next used cats, rabbits and small dogs, then larger dogs until, on the day before his death he had two huge mastiffs brought to the house and took them into the laboratory. None of the animals taken behind the door ever reappeared, and she quite naturally assumed that they had been the subjects of vivisection. My theory, is that he—"

The doctor was interrupted by a loud rap at the study door. He rose and opened it, revealing a sturdy uniformed policeman. A frightened housemaid peered around his huge bulk. The man seemed greatly perturbed.

ed. His voice shook as he asked—
"Where's Rooney?"

"He's on guard in the laboratory," replied the doctor. "Are you the man sent to relive him?"

"I'm Officer Burke. The maid, here, showed me to the laboratory, but Rooney ain't there. It's a horrible place. Don't blame him for leavin'."

"Yes. That skeleton on the floor isn't exactly pretty."

"*That skeleton? You mean them skeletons. There was two of them, and one was dressed in a cop's uniform!*"

With an exclamation of surprise and horror, the doctor threw down the manuscripts he was holding and rushed for the stairway. I followed breathlessly.

A Strange Diary

What we saw in that awful room of death confirmed our wildest fears. A skeleton, with the bones whitened like those of the professor, lay on the floor facing the doorway. One bony arm was stretched across the threshold as if its owner had been attempting to drag himself from the room when struck down. A blue uniform bagged loosely over the bones, and on the feet were the heavy, hob-nailed, square-toed shoes I had noticed on Rooney's feet some time before.

The doctor squinted at the star on the breast of the recumbent figure. Then he turned to Officer Burke who had come up behind us.

"What was Rooney's number?" he asked.

"942."

"Then this is Rooney's uniform, and it probably is his skeleton. Call up the chief and tell him what happened. This is horrible—diabolical!"

"Your theory," I said, "does this shed any light on it?"

"On the contrary," he replied, "It makes the case more baffling than ever. It seems incredible that such things can really happen. I tell you, Evans, there is some mysterious force at work here—something new and unheard of in the annals of scientific research. It is my opinion that the late Professor Townsend chanced upon some force hitherto unknown to scientists and played with it like a little child with fire until it suddenly destroyed him. The death of Officer Rooney is ample proof that this terrible force, whatever it may be, survived him.

"Now let us conjecture regarding the nature of this thing that has taken the lives of two human beings. We know that the professor's chief ambition was to create life from inert matter. All of his experiments in the laboratory were made with this object in

view. All his printed works show plainly his firm belief that the thing could be accomplished, some of them going so far as to point out the processes by which he believed protoplasm, the primitive basic life substance, might be analyzed. As protoplasm is a compound of almost unlimited complexity in its physical and chemical constitution, our most skilled chemists have been unable to unravel its secrets. In fact, the further a chemist gets in his attempts at analysis, the more baffling and complex he finds it to be. Being a compound composed of complex substances which are in turn composed of others still more complex, and so on, ad infinitum, its secrets are fully as inscrutable as those of the starry universe.

"The professor's first step, therefore, in this seemingly impossible undertaking, would be to analyze protoplasm. Assuming that he succeeded in reducing it to its basic elements, his next problem would be to take similar elements and, through a process even more complex than the previous one, assemble and reassemble them until they were capable of sustaining life.

"Let us suppose that he did these things. Let us assume that he has succeeded in creating protoplasm. What next? We will say that he has taken some primitive form of life for a pat-

tern, a moneron, perhaps, the most simple type of animal, consisting of a single cell of protoplasm. There still exists a difference between the moneron and the synthetically created cell. Chemically and physically they are the same, but the moneron is *alive*.

"What is life? Broadly defined as we recognize it on this earth, it is a temporary union of mind and matter. There may be, and probably is another kind of life which is simply mind without matter, but we of the material world know it not. To us, mind without matter or matter without mind are equally dead. The moneron has a mind—a soul—a something that makes it a living individual. Call it what you will. The professor's cell of man-made protoplasm has not. Can you conceive of any possible way in which he could, having reached this stage, create an individual mind or soul, an essence of life that once united with his cell of protoplasm would form an entity?"

"It seems impossible," I admitted.

"So it seems," he replied, "yet it is only on such an hypothesis that I can account for the mysterious deaths of the professor and Officer Rooney."

"But I don't see how a moneron or a creature remotely resembling one could kill and com-

pletely devour a man in less than two hours," I objected.

"Nor I," agreed the doctor. "In fact, I am of the opinion that if the professor did succeed in creating life, the result was unlike any creature large or small, now inhabiting the earth—a hideous monster, perhaps, with undreamed of powers and possibilities—an alien organism among billions of other organisms, hating them all because it has nothing in common with them—a malignant entity governed solely by the primitive desire for food and growth with only hatred of and envy for the more fortunate *natural* creatures around it."

"If the professor did succeed in creating or discovering such a creature," I said, "it is evidently in this house at this very moment. Unless it has the faculty of making itself invisible, a thorough search should reveal its whereabouts, for having consumed two men it must be a monster of no mean proportions."

"That is true," replied the doctor, "however, we have another hypothesis that is equally worthy of our consideration if we accept the premise that the professor created a living creature. Judging from his writings he spent a considerable portion of his time studying and experimenting in microbiology. Suppose he succeeded in creating a

microscopic organism, and that organism had the power to reproduce its kind. If it reproduced by fission, that is, by simply dividing itself after it had attained a certain size, the only check to its increase would be death or lack of food. The more food it could obtain, that much more rapidly would it and its descendants multiply. Countless billions of such creatures might occupy this room and yet be invisible without the aid of a compound microscope. There is ample room for a swarm of such creatures numerous enough to devour a man to float in the air above our heads without revealing its presence."

The words of the doctor affected me strangely. Involuntarily I looked upward, half expecting a swarm of man-eating microbes to descend and devour me. For a moment I was seized with a feeling of panic so strong I could scarcely restrain myself from leaping for the door. The fact that the sun had just set and dusky shadows were thickening in the room augmented the illusion. I crossed the floor nervously and pressed the switch beside the door. Instantly the place was flooded with blue-white light from a cluster of powerful globes depending from the middle of the ceiling.

As I was recrossing the room my eyes fell on the contents

of the glass-lined tank. I stared unbelievably for a moment, then called Dr. Dorp.

"What is it, Evans?" he asked.

"The liquid in this tank," I replied. "It has changed color. Something has turned it pink."

"The effect of the artificial light, no doubt," he said, coming up beside me. Then the expression of doubt on his face changed to surprise and wonder.

"You are right," he exclaimed. "It has not only changed color, but a still more remarkable transformation has taken place. When we noticed it this afternoon, the tank was a third full of the colorless liquid. *This pink fluid reaches half way to the top!*"

A Drawer Filled with Bones

The tread of many feet sounded in the hall. Chief McGraw paused in the doorway, staring down at the blue-clad skeleton on the floor, a look of horror on his face. Behind him were four policemen in uniform.

"Is—is that the skeleton of poor old Rooney?" McGraw asked. "It's too ghastly a thing to believe."

"I'm afraid it is," replied Dr. Dorp.

The chief knelt and examined the star on the bagging blue coat.

"It's hellish, positively hellish," he said, rising. "Do you know what killed him?"

"We are working on a theory —" began the doctor, but was interrupted by the chief.

"Theories be damned!" he snapped. "Work on your theories if you want to. This thing has gone too far. I'm going to get some *facts*." He swung on the four men behind him. "Search the house," he said. "Look sharp for anything of a suspicious nature. An infernal machine, perhaps, or a blood-sucking animal. There is a man-killer of some kind, human or otherwise, hidden in this house, and it's our business to find it."

When the men had departed, he stepped over Rooney's skeleton.

"I'll search this room myself," he said.

He did, with professional thoroughness, looking for hidden panels and sounding the walls, both in the open areas and behind the shelves, for hollow spaces. Then he began opening the drawers in a tall cabinet that stood in one corner, disclosing surgical and dissecting instruments of various kinds, an indexed set of microscope slides with some extra lenses, platinum dishes; porcelain drying pans, crucibles, glass rods and tubing, pipettes, rubber tubing and stoppers, rubber gloves and aprons, and other miscellaneous laboratory paraphernalia.

The bottom drawer of the cabi-

net was quite large and deep. The chief cried out excitedly when he saw its contents.

"Good Lord! Look at that!" he exclaimed.

It was filled to the top with dry, white bones.

"Nothing but the bones of small animals," said Dr. Dorp, picking up a skull. "This, for instance, is the skull of a dog." Then, taking up another: "Here is the skull of a rabbit. Notice the characteristic chisel-shaped teeth. This one beside it once supported the be-whiskered countenance of a common house cat.

"What do you suppose he was doing with them?" asked the chief.

"It is my belief that they were brought here to be killed and devoured by the same thing that killed the professor and Rooney."

"And that thing is—"

"At present, merely a shadowy theory, although it most certainly has an existence. There is a power in this house that is a menace to everyone under this roof — a malignant entity that destroys human beings in some mysterious manner unparalleled in the annals of science or human experience. This much we know, reasoning from effects. Reasoning from possible causes we are aware that the hobby of Professor Townsend was the endeavor to create a living thing

from inorganic matter, and putting the two together it seems to me that the logical hypothesis would be that he either succeeded in creating a monster of a sort unknown to biologists, or discovered and developed unheard of powers and habits in a creature already known."

"If there's such a thing in this house, believe me I'm going to find it," said the chief, stamping out of the room.

"Now that we have a few moments to ourselves," said Dr. Dorp when McGraw had departed, "let us conduct a search, or rather an inquiry on our own account. I perceive that we have a very excellent compound microscope at our disposal and am curious to examine the liquid which has so mysteriously risen and changed color in the tank."

He took a blank slide from the cabinet drawer and a small glass rod from the table. As he was about to dip the rod in the liquid he uttered a low exclamation of surprise.

"What's up now?" I asked.

"This amazing liquid has again become transparent," he replied. "The red tint is gone."

He plunged the tip of the rod into the viscous liquid, twisted it slightly and withdrew it. Although the liquid seemed quite heavy it slipped from the end of the rod much after the manner of the white of an egg. After

considerable juggling he succeeded in obtaining a small amount which he smeared on the slide. He then placed the slide in position and adjusted the microscope with a practiced hand.

"Well," I asked, after he had peered into the eyepiece for a full ten minutes, "what is the stuff, anyway?"

"Here, look for yourself," he replied.

What I saw in the field of the microscope appeared to be a mesh work or foam work of exceedingly fine bubbles or perhaps globules. Granules of different sizes and shapes seemed imbedded in these globules, and the whole was dotted at intervals with small white objects. While I watched, several of these white objects seemed to dissolve and disappear. All of them apparently were endowed with life, for I noticed that they expanded or contracted spasmodically and seemed endeavoring to push their way through the surrounding bubbles.

"Seems to be a sort of foam," I said, "with something alive floating in it."

"The foam, as you call it, bears a singular resemblance to the basic life principle, protoplasm, when seen under the microscope," replied the doctor.

"But those white things—" I began.

"The white things," he went

on, "are the living remnants of a complex organism that has been destroyed. They are waging an unequal and hopeless battle against assimilation by the globules that surround them. These faithful guardians of the organism when alive still fight, and will continue to fight the enemy until, figuratively speaking, the last man falls."

"But what are they?" I demanded.

"Unless I am very much mistaken," he replied, "they are—"

His answer was cut short by the appearance of Chief McGraw.

"Coroner and jury are downstairs," he said tersely. "I suppose they'll want your testimony. I'll leave a couple of men on guard here if you want to come down."

"Let us go down to the study and complete our perusal of the professor's manuscripts while the jury is in session," said the doctor. "We can thus save considerable time and will be on hand when they are ready to question us."

We met Coroner Haynes and his jurors at the foot of the stairs. They were about to go up for an inspection of the laboratory and its gruesome contents.

Dr. Dorp switched on one of the reading lamps and closed the door. Then he established himself in a comfortable chair with a pile of manuscripts, and I fol-

lowed his example. We found essays and articles on almost every subject pertaining to the transmission or generation of life. There were papers on anatomy, bacteriology, cell-structure, microbiology and embryology. There were treatises on evolution, spontaneous generation, and the structures and habits of micro-organisms. A forceful and extremely impressive essay set forth the astounding theory that all life was merely a form of force generated from matter. The reasoning was, of course, purely analogical. The professor's contention, stated briefly, was that just as electricity, a force that is invisible and indefinable, is generated by the friction of particles of certain kinds of matter, so life is generated and springs into being when certain other types of matter come together in the right proportions and combinations.

"What is your opinion of this theory?" I asked Dr. Dorp.

"It is most cleverly put, but based on the false premise of the materialists that there are only two things in the universe, matter and force. They do not recognize the power that controls the force which moves the matter toward a fixed objective. That power is mind. Thus, to them, all life and all mind are merely forms of force generated originally from inert matter."

"If the professor succeeded in creating a living thing from inert matter," I said, "it seems to me that he has demonstrated his proposition."

"Why?"

"Because he was experimenting with dead matter and not with mind or living creatures. There would be no mind or soul involved to inherit its being from a parent mind or soul. A new life entity would be generated, as it were, from matter which formerly contained no life."

"I think," said the doctor quietly, "you would have stated the proposition more accurately had you said that a life entity—a mind without a body—had been induced to enter the body synthetically created."

Our discourse was interrupted by Chief McGraw, who informed us that we were wanted by the coroner.

The Coroner's Jury

Dr. Dorp did the talking before the coroner's jury. All the way through his testimony was negative. When asked if he had any idea what killed the professor and the policeman, he replied that he had several ideas, but none of them would be worth bringing before the jury without more facts to substantiate them. I could see that his purpose was to get the inquest over with as

soon as possible so we might continue the investigation.

After due deliberation a verdict of "Death from cause or causes unknown," was brought in, and the coroner departed with his men.

"Now that the inquest is over, what do you suggest?" McGraw asked the doctor.

"My suggestion is that we immediately destroy the liquid in the glass-lined tank in the laboratory."

"Why?"

"Because I am convinced that it is at least one of the causes of the deaths that have taken place in this house."

"I suppose you have a good reason for your assumption."

"An excellent one, I believe. While you and your men were searching the house, Evans and I did a little investigating on our own. We put some of the liquid under the compound microscope, and as we both saw the same things, I am convinced that my eyes did not deceive me. Tell the chief what you saw, Evans."

I described the foam work, the granules and the white objects which appeared to be alive and struggling to escape.

"All Greek to me," said the chief. "What was it?"

"The foam work with its accompanying granules closely resembled protoplasm, the basic life substance."

"And the white things—"

"Were white blood corpuscles from the veins of a human being. They were the strongest of the human body cells to resist assimilation and consequently the last to succumb. The red corpuscles turned the liquid pink for a while, but they had disappeared before we made our microscopic examination."

"Good Lord, why didn't you tell me this before?" demanded the chief. "Let's go up and destroy the stuff now. Those two men up there might be killed any minute."

We found the two policemen unharmed and made our plans for the destruction of the substance in the tank. Several demijohns of acid stood under the table, and the doctor selected one nearly full of sulphuric acid.

"Open the windows," he ordered. "This is going to make a horrible stench."

Then he removed the rubber stopper from the mouth of the demijohn, and I helped him hoist it to the edge of the tank. The searing liquid struck the heavy fluid in the tank with a hissing sound and bored into it like hot water poured in a snow bank. The jelly-like mass quivered slightly, and pungent, nauseating fumes arose to torment our nostrils.

Then, suddenly, as if in horrible pain and awakened to the

danger of its dissolution, the plas-
mic substance began to heave and
billow toward the top of the tank
with a movement suggestive of
the writhing of a huge coiled
serpent in its death agony. By
directing the stream of acid at
the various peaks that arose, we
endeavored to keep it all washed
down to a common level. Then
a dozen peaks rose simultaneous-
ly and I noticed that one was cap-
ped with a round ball in the cen-
ter of which was a black spot.

"The nucleus!" cried the doc-
tor excitedly, shifting the demi-
john. "Pour it on the nucleus!"

We were too late. The thing up-
reared itself with amazing speed
and lopped over the edge of the
tank opposite us. We dropped the
nearly-emptied demijohn into the
tank and rushed around to inter-
cept it, just in time to see the ball
containing the black spot separ-
ate itself from the stringy mass
by which it was suspended, drop
to the floor and roll under the
table.

An exciting chase of several
minutes ensued. The thing dart-
ed, or rather, rolled from place
to place with amazing rapidity.
The tile floor was cracked in a
dozen places by blows from the
clubs of the two policemen who
assisted us. At length we drove
it into the corner beneath the lav-
atory and advanced in close for-
mation. I had armed myself with
a large spatula, the doctor grip-

ped a heavy pestle, the two police-
men had their clubs and the chief
held his automatic pistol in readi-
ness.

As we drew close, we moved
with extreme caution, our nerves
taut, our weapons ready to strike
when the thing should make its
dash for liberty. We waited breath-
lessly, but no movement came
from the corner. I prodded the
space behind the water pipes with
my spatula. Still no sign of the
thing we were after. Then I peer-
ed behind them and saw the rea-
son—a hole an inch in diameter
in the tile floor, probably drilled
in the wrong place by a careless
plumber and left unfilled because
it was out of sight.

When I pointed it out to Dr.
Dorp, he shook his head solemn-
ly. "The Malignant Entity has es-
caped," he said. "No one in this
house—in this community, even
—is safe until it is captured or
killed."

"You don't mean to tell me that
little thing we were chasing a-
round the room could kill any-
body," said the chief.

"I am not so sure that it could
kill any one now that it has been
reduced to the size of a golf ball,
although the cytoplasm surround-
ing the nucleus evidently has
the power of quickly dissolving
and assimilating living tissues.
Its growth, apparently, is only
limited by the amount of food it
can find."

"Maybe we'd better get the women out of the house," said the chief.

"The sooner, the better. I suggest also that you surround the place with men armed with shot-guns. If that thing gets out and starts to grow, I shudder to think of what may happen. Children will not be safe outside their own homes, and perhaps not even within them. Adults will be attacked as soon as the creature has attained sufficient size, and there is always the possibility that it may have the power to reproduce its kind. Organisms of this kind, as a rule, multiply with exceeding rapidity. Think of a thousand or perhaps a million such monsters roaming through the land. It is almost impossible to kill them because of the power we have just witnessed, of leaving the body, no matter how large it has grown, taking with it only enough cytoplasm to protect the nucleus and make a new start."

We were all gasping from the fumes that came out of the tank, and glad to get out of the laboratory.

When all were assembled in the living room, the chief phoned headquarters for men and shot-guns while Dr. Dorp and I explained what we had found to Miss Townsend.

After we had described our adventure in detail, the doctor said: "It seems strange that your father

left no records of his experiments with the monster."

"I feel quite sure that he left a record of some sort, though I have never seen it," replied Miss Townsend.

"Have you any idea where it is?"

"Perhaps in his safe in the study."

"I do not remember seeing a safe in the study."

"Naturally. It is hidden. Come and I will show you where it is."

We followed her into the study, and she swung back one of the bookcases which was hung on concealed hinges, revealing a small wall safe.

"Would you mind opening it for us?" asked the doctor.

She turned the dial to number twelve, then pulled the lever. It did not move. She seemed surprised, set the dial more carefully and tried again with the same result.

"It's no use, I guess," she said. "The last number of the combination is twelve. He usually turned it back to one, and then it was only necessary to turn it to twelve to open it. He must have locked it last night."

"Don't you know the combination?"

"No. Father was the only one who knew that."

"I wonder if you would object to our blowing the safe," he asked.

"Not if it will be of assistance to you."

Chief McGraw, who had just finished calling headquarters, came into the room.

"Think you can get us a safe-cracker tonight, Chief?" asked the doctor.

"Get you most anything you want. What's in the safe?"

"We believe it contains some valuable information regarding the thing we were chasing a while ago."

"I'll get a man out here right away," said McGraw, going once more to the phone.

Officer Burke escorted Miss Townsend, Mrs. Harms and the two servants to the Harms home, where they were to spend the night.

Shortly afterward there arrived twenty policemen armed with shotguns and carrying several dozen bulls-eye lanterns. They brought extra weapons, which were distributed to all of us who remained in the house, the chief, the doctor, the four policemen and myself. Burke was to remain on guard next door.

A ring of lanterns was placed around the house and the twenty armed men were posted at intervals between them. We then divided our forces as follows: One policeman was placed on guard in the laboratory. Chief McGraw with another policeman patrolled the upper rooms and halls. The

doctor and one policeman remained on the first floor and I, accompanied by a strapping young fellow named Black, who had recently been admitted to the force, did sentry duty in the basement.

Theorizing

The Townsend basement was divided into three rooms, each lighted rather dimly by the yellow rays from an incandescent globe suspended on a short drop-cord. The furnace room and coal bins were situated at the rearend. The middle compartment contained a miscellaneous assortment of boxes, barrels, garden tools, household tools, canned fruits, empty fruit jars, bottles, and what not. The front room was used as a laundry.

Officer Black and I searched each room thoroughly, using a flashlight in the dark corners and moving everything that wasn't fastened to the floor or walls. Several mice jumped out from behind boxes and barrels, but we saw no sign of the creature we were hunting.

We were peering behind the furnace when several loud squeaks came to us from the middle room.

With shotgun held in readiness, I moved stealthily toward the point from which the sound came. There, in the center of the floor almost under the yellow electric light bulb, I saw the fast disap-

pearing body of a mouse under a mass of plasmic jelly.

My first impulse was to shoot, but on second thought, I decided to attempt to capture the thing alive if possible. Instructing Black to hold his weapon in readiness in case I failed, I unscrewed the lid from a large empty fruit jar and walked softly toward the center of the floor. I expected the thing to spring away, but to my surprise it lay almost motionless on the body of its victim. I could see streaks of bright red flowing through the jelly-like mass as blood of the mouse was drawn up for assimilation.

I clapped the mouth of the jar over the creature and still it made no effort to escape. Then, sliding a fire shovel which Black brought me, under the thing and its victim, I turned the jar right side up. It fell to the bottom of the receptacle, still clinging to the now formless mass that had once been a mouse and making no effort to escape. I put the lid in place and screwed it down tight.

"Now try to get away, you devil!" I cried, shaking the jar exultantly.

I almost dropped it a moment later as a muffled explosion jarred the building. Then I remembered Chief McGraw's safe-cracker, and hurried upstairs.

When I reached the living room, Dr. Dorp was emerging from the study in a cloud of plaster dust.

In his hand was a thick, loose-leaf book.

"I have the professor's diary," he called excitedly.

"Don't get fussed over such trifles," I replied. "Look what I've got. Caught it alive, too."

I put the jar on the table, and he squinted at it for a moment. The blood-bloated monstrosity had separated its shapeless hulk from the whitened bones of its victim and was sluggishly crawling up the side of the glass.

"You caught it, sure enough," he said. "I only hope it hasn't any little sons or daughters about."

"I'll keep the house under guard for a couple of days," said Chief McGraw, who had come down to learn the result of the cracksman's labors. "If there are any more of these things around, they ought to show themselves by that time."

The doctor drew a chair up to the table and eagerly scanned the pages of the diary while we watched the antics of the thing in the jar. It kept getting lighter colored all the time, and more lively. By the time the cytoplasm had become transparent it was racing around, contorting its body into all kinds of shapes—flat, oval, and round. At times it put forth pseudopods, sometimes elongating them until it resembled a small cuttle fish.

"September twenty-third was the night Immune Benny died

wasn't it, Chief?" asked the doctor.

"Right. Why?"

"Then this diary tallies with Miss Townsend's testimony. Here is the professor's entry.

" *'September 23, Nearly Midnight.*

" 'Eureka! I have succeeded. I placed a tiny drop of syntheplasm on the slide tonight as I have done a thousand times before, and covered it with a weak, sterile solution of gelatine.

" 'I watched it steadily for a half hour, but nothing happened until, suddenly, I noticed a tiny black spot forming in its center. I am positive there were no animalcules either in the syntheplasm or the solution, yet no sooner had the black spot become readily distinguishable than my speck of syntheplasm began moving about as if searching for food. Evidently it cannot subsist on gelatine.

" 'I next introduced a rhizopod into the solution. My animal slightly resembles it, but is larger and gets about much faster. I wanted to compare the two but the rhizopod was quickly devoured. Now I know what to feed it.' "

"It is growing late, so I will not read all the details to you," continued the doctor. "Suffice to say that the professor discovered his synthetically created creature would feed on nothing but living

creatures. He fed it so many microscopic animals the second day that it grew to a size visible to the naked eye. Then he fed it gnats, mosquitos, flies, beetles, and finally mice, when it became so large that he was forced to transfer it from the small porcelain dish in which he kept it, to a much larger one.

"The thing grew at a prodigious rate of speed. Its growth seemed only limited by the amount of living creatures it was permitted to devour. At length he was compelled to keep it in the glass-lined tank which he had been using for the culture of infusoria. Its victims were thrown into the tank alive and were quickly killed by the monster. He noticed that it was sluggish while assimilating its food, but moved with cat-like quickness when hungry. Though it had no eyes, it seemed to sense the approach of food in some way and, toward the last, stretched forth pseudopods and snatched the animals from his hands.

"Yesterday this professor led two mastiffs into the room. Hardly had he closed the door of the laboratory before the monster was out of the tank. It killed and devoured the two big dogs in less than a half hour—then crawled back sluggishly into the tank to digest its meal. Thus ends the written record of the professor's adventures with the Malignant

Entity. His whitened bones on the floor of the laboratory are mute testimony of what occurred."

There was a moment of awed silence when the doctor finished his narrative. His eyes fell on the struggling thing in the glass jar.

"What are you going to do with it?" I asked.

"Come," he said, taking up the jar and starting for the basement. "I will show you."

The chief and I followed him down the basement stairs and into the furnace room. He opened the fire-door and tossed the jar on the glowing coals.

The thing raced about spasmodically for a moment in the intense heat, then fell huddled in the bottom of the jar. Suddenly, as if inflated from beneath, it puffed upward and outward, almost filling the receptacle in a shape that resembled a human head. I thought this only a fig-

ment of my imagination at first—blinked—and looked a second time. The face of a man stared back at me from behind the curved glass, eyes glowing with malevolent hatred and lips drawn back in a snarl that revealed crooked, yellow fangs. For a moment only the vision held. The next instant the jar was empty of all save a tiny pile of white, flaky ash and the bones of the mouse.

Dr. Dorp shut the door suddenly and noisily.

"That face," I exclaimed. "Did you see it also?"

"A queer distortion of the gas-inflated protoplasm," he replied.

Chief McGraw seemed greatly perturbed. He drew a long black cigar from his pocket, lighted it and puffed nervously for a moment.

"Distortion, hell," he muttered. "*It was a perfect double for the face of Immune Benny!*"

THE END

Don't Miss

KEITH LAUMER'S NEW NOVEL AXE AND DRAGON

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From the very first issue of Amazing (April, 1926), here's a story—by the author of "The Coming of the Ice" and "The Chamber of Life"—so modern in tone and style that it's hard to believe that it first appeared more than forty years ago. And although later writers—for example, Donald Wandrei, with that brilliant "thought-variant" Colossus—might ring more significant changes on the theme of macrocosmos, which of them (as Wertenbaker did) would first do so at the astonishingly precocious age of sixteen? And which of them would also follow through with an exciting sequel—coming up in our April issue—even more provocative than the original?

the Man from the Atom

BY G. PEYTON WERTENBAKER

Illustrated by PAUL

I AM a lost soul, and I am homesick. Yes, homesick. Yet how vain is homesickness when one is without a home! I can but be sick for a home that has gone. For my home departed millions of years ago, and there is now not even a trace of its former existence. Millions of years ago, I say, in all truth and earnestness. But I must tell the tale—though there is no man left to understand it.

I well remember that morning

when my friend, Professor Martyn, called me to him on a matter of the greatest importance. I may explain that the Professor was one of those mysterious outcasts, geniuses whom Science would not recognize because they scorned the pettiness of the men who represented Science. Martyn was first of all a scientist, but almost as equally he was a man of intense imagination, and where the ordinary man crept along from detail to detail and

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THE MAN FROM THE ATOM

required a complete model before being able to visualize the results of his work, Professor Martyn first grasped the great results of his contemplated work, the vast, far-reaching effects, and then built with the end in view.

The Professor had few friends. Ordinary men avoided him because they were unable to understand the greatness of his vision. Where he plainly saw pictures of worlds and universes, they vainly groped among pictures of his words on printed pages. That was their impression of a word. A group of letters. His was of the picture it presented in his mind. I, however, though I had not the slightest claim to scientific knowledge, was romantic to a high degree, and always willing to carry out his strange experiments for the sake of the adventure and the strangeness of it all. And so the advantages were equal. I had a mysterious personage ready to furnish me with the unusual. He had a willing subject to try out his inventions, for he reasoned quite naturally that should he himself perform the experiments, the world would be in danger of losing a mentality it might eventually have need of.

And so it was that I hurried to him without the slightest hesitation upon that, to me, momentous day of days in my life. I little realized the great change

that soon would come over my existence, yet I knew that I was in for an adventure, certainly startling, possibly fatal. I had no delusions concerning my luck.

I found Professor Martyn in his laboratory bending, with the eyes of a miser counting his gold, over a tiny machine that might easily have fitted in my pocket. He did not see me for a moment, but when he finally looked up with a sigh of regret that he must tear his eyes away from his new and wonderful brain-child, whatever it might be, he waved me a little unsteadily into a chair, and sank down in one himself, with the machine in his lap. I waited, placing myself in what I considered a receptive mood.

"Kirby," he began abruptly at last, "have you ever read your *Alice in Wonderland*?" I gasped perhaps, in my surprise.

"*Alice in—!* are you joking, Professor?"

"Certainly not," he assured me. I speak in all seriousness."

"Perhaps I am playing with you unduly," he said, "but do you remember the episode of the two pieces of cheese, if my own recollection is correct, one of which made one grow, the other shrink?"

I assented. "But," I said incredulously, "certainly you cannot tell me you have spent your time in preparing magical cheeses?" He laughed aloud this time, and

then, seeing my discomfort, unburdened himself of his latest triumph.

"No Kirby, not just that, but I have indeed constructed a machine that you will be incapable of believing until you try it. With this little object in my lap, you could grow forever, until there was nothing left in the universe to surpass. Or you could shrink so as to observe the minutest of atoms, standing upon it as you now stand upon the earth. It is an invention that will make scientific knowledge perfect!" He halted with flushed face and gleaming eyes. I could find nothing to say, for the thing was colossal, magnificent in its possibilities. If it worked. But I could not resist a suspicion of so tiny a machine.

"Professor, are you in absolute earnest?" I cried.

"Have I ever jested about so wonderful a thing?" he retorted quietly. I knew he had not.

"But surely that is merely a model?"

"It is the machine itself!"

II

I was too astounded to speak at first. But finally, "Tell me about it," I gasped. "This is certainly the most fantastic invention you have made yet! How does it work?"

"I am afraid," suggested Pro-

fessor Martyn, "that you could not understand all the technical details. It is horribly complicated. And besides, I am anxious to try it out. But I will give you an idea of it.

"Of course, you know that an object may be divided in half forever, as you have learned in high school, without being entirely exhausted. It is this principle that is used in shrinking. I hardly understand the thing's mechanism myself—it was the result of an accident—but I know that the machine not only divides every atom, every molecule, every electron of the body into two exactly equal parts, but it accomplishes the same feat in itself, thus keeping pace with its manipulator. The matter it removes from the body is reduced to a gaseous form, and left in the air. There are six wires that you do not see, which connect with the body, while the machine itself is placed on the chest, held by a small belt that carries wires to the front of the body where the two controlling buttons are placed.

"When the user wishes to grow, he presses the upper button, and the machine then extracts atoms from the air which it converts, by a reverse method from the first, into atoms identical to certain others in the body, the two atoms thus formed joining into one large particle of twice the original size.

"As I said, I have little idea of my invention except that it works by means of atomic energy. I was intending to make an atomic energy motor, when I observed certain parts to increase and diminish strangely in size. It was practically by blind instinct that I have worked the thing up. And now I fear I shall not be able to discover the source of my atomic energy until I can put together, with great care, another such machine, for I am afraid to risk taking this apart for analysis."

"And I," I said suddenly, with the awe I felt for such a discovery quite perceptible, I fear, in my tone, "I am to try out this machine?"

"If you are willing," he said simply. "You must realize, of course, that there are a multitude of unknown dangers. I know nothing of the complete effects of the machine. But my experiments on inanimate objects have seemed satisfactory."

"I am willing to take any risks," I said enthusiastically, "If you are willing to risk your great machine. Why, don't you realize, Professor, that this will revolutionize Science? There is nothing, hardly, that will be unknown. Astronomy will be complete, for there will be nothing to do but to increase in size enough to observe beyond our atmosphere, or one could stand upon worlds like rocks to examine others."

"Exactly. I have calculated that the effect of a huge foot covering whole countries would be slight, so equally distributed would the weights be. Probably it would rest upon tall buildings and trees with ease. But in space, of course, no support should be necessary."

"And then, as you said, one could shrink until the mysteries of electrons would be revealed. Of course, there would be danger in descending into apparent nothingness, not knowing where a new world-atom could be found upon which to stand. But dangers must be risked."

"But now, Kirby," remarked the Professor officially, "time passes, and I should like you to make your little journey soon that I may quickly know its results. Have you any affairs you would like to put in order, in case—"

"None," I said. I was always ready for these experiments. And though this promised to be magnificently momentous, I was all ready. "No, if I return in a few hours, I shall find everything all right. If not, I am still prepared." He beamed in approval.

"Fine. Of course you understand that our experiment must take place at some secluded spot. If you are ready, we can proceed at once to a country laboratory of mind that will, I think, be safe."

I assented, and we hastily donned our overcoats, the Professor spending a moment or two collecting some necessary apparatus. Then we packed the machine in a safe box, and left his home.

"Are you all ready, Kirby?" The Professor's voice was firm, but my practiced ear could detect the slightest vibrations that indicated to me his intense inner feelings. I hesitated a moment. I was not afraid of going. Never that. But there seemed something partaking almost of finality about this departure. It was different from anything I had ever felt before.

"All ready, Professor," I said cheerfully after a brief moment.

"Are you going to magnify or minimize yourself?"

"It shall be growth," I answered, without a moment's hesitation there. The stars, and what lay beyond. . . . It was that I cared for. The Professor looked at me earnestly, deeply engrossed in thought. Finally he said, "Kirby, if you are to make an excursion into interstellar space, you realize that not only would you freeze to death, but also die from lack of air."

Walking to a cabinet in the rear of the room, he opened it and withdrew from it some strange looking paraphernalia. "This," he said, holding up a queer looking suit, "is made of a great quantity of interlocking metal cells, her-

metically sealed, from which the air has been completely exhausted so as to give the cells a high vacuum. These separate cells are then woven into the fabric. When you wear this suit, you will, in fact, be enclosed in a sort of thermos bottle. No heat can leave this suit, and the most intensive cold cannot penetrate through it."

I quickly got into the suit, which was not as heavy as one might imagine. It covered not only the entire body, but the feet and hands as well, the hand part being a sort of mitten.

After I had gotten into the suit, the Professor placed over my head a sort of transparent dome which he explained was made of strong unbreakable bakelite. The globe itself really was made of several globes, one within the other. The globes only touched at the lower rim. The interstices where the globes did not touch formed a vacuum, the air having been drawn from the spaces. Consequently heat could not escape from the transparent head piece nor could the cold come in. From the back of this head gear, a flexible tube led into the interior; it was connected to a small compressed oxygen tank, which the Professor strapped to my back.

He then placed the wonder machine with its row of buttons on my chest, and connected the six wires to the arms and other parts of my body.

Professor Martyn grasped my hand then, and said in his firm, quiet voice:

"Then goodbye, Kirby, for awhile. Press the first button when you are ready to go. May the Fates be with you!"

The Professor next placed the transparent head gear over my head and secured it with attachments to my vacuum suit. A strange feeling of quietness and solitude came over me. While I could still see the Professor, I could hear him talk no longer as sounds cannot pierce a vacuum. Once more the Professor shook my hand warmly.

Then, somehow, I found myself pressing down the uppermost of three buttons. Instantly there was a tingling, electric flash all through my body. Martyn, trees, distant buildings, all seemed to shoot away into nothingness. Almost in panic, I pushed the middle button. I stopped. I could not help it, for this disappearing of all my world acted upon my consciousness. I had a strange feeling that I was leaving forever.

I looked down, and Professor Martyn, a tiny speck in an automobile far below, waved up to me cheerfully as he started his car and began to speed away. He was fleeing the immediate danger of my growth, when my feet would begin to cover an immense area, until I could be almost entirely in space. I gathered my

courage quickly, fiercely, and pressed the top button again. Once more the earth began to get smaller, little by little, but faster. A tingling sensation was all over me, exhilarating if almost painful where the wires were connected upon my forearms, my legs, about the forehead, and upon my chest.

It did never seem as though I was changing, but rather that the world was shrinking away, faster and faster. The clouds were falling upon me with threatening swiftness, until my head broke suddenly through them, and my body was obscured, and the earth below, save tiny glimpses, as though of a distant landscape through a fog. Far away I could see a few tall crags that broke through even as had I, scorning from their majestic height the world below. Now indeed, if never before, was my head "among the clouds!"

But even the clouds were going. I began to get an idea of the earth as a great ball of thick cloud. There was a pricking sensation beneath my feet, as though I stood upon pine needles. It gave me a feeling of power to know that these were trees and hills.

I began to feel insecure, as though my support were doing something stealthy beneath me. Have you ever seen an elephant perform upon a little rolling ball?

Well that is how I felt. The earth was rotating, while I no longer could move upon it. While I pondered, watching in some alarm as it became more and more like a little ball a few feet thick, it took matters in its own hand. My feet slipped off, suddenly, and I was lying absolutely motionless, powerless to move, in space!

I watched the earth awhile as it shrank, and even observed it now as it moved about the sun. I could see other planets that had grown at first a trifle larger and were now getting smaller again, about the same size as the earth, tiny balls of no more than a couple of inches in diameter. . . .

It was getting much darker. The sun no longer gave much light, for there was no atmosphere to diffuse it. It was a great blinding ball of fire near my feet now, and the planets were traveling about it swiftly. I could see the light reflected on one side, dark on the other, on each planet. The sun could be seen to move perceptibly too, though very slightly. As my feet grew larger, threatening to touch it, I hastily drew them up with ease and hung suspended in space in a half-sitting position as I grew.

Turning my head away all at once, I observed in some surprise that some of the stars were growing larger, coming nearer and nearer. For a time I watched

their swift approach, but they gradually seemed to be getting smaller rather than larger. I looked again at my own system. To my amazement, it had moved what seemed about a yard from its former position, and was much smaller. The planets I saw no longer, but there were faint streaks of light in circles about the sun, and I understood that these were the tracks of the worlds that now moved about their parent too swiftly to be followed with the eye.

I could see all the stars moving hither and yon now, although they still continued to appear closer and closer together. I found a number lying practically on the plane of my chest, but above that they seemed to cease. I could now see no planets, only the tiny sun moving farther and farther, faster and faster along its path. I could discern, it seemed to me, a trend in its and its companions' path. For on one side they seemed to be going one way, and the opposite way on the other. In front, they seemed to move across my vision. Gradually I came to understand that this was a great circle swinging vastly about me, faster and faster.

I had grown until the stars were circling now about my legs. I seemed to be the center of a huge vortex. And they were coming closer and closer together, as though to hem me about. Yet I

could not move all of me away. I could only move my limbs and head in relation to my stationary body. The nearest star, a tiny bright speck, was a few yards away. My own sun was like a bright period upon a blackboard. But the stars were coming nearer and nearer. It seemed necessary for me to move somehow, so I drew my legs up and shot them out with all my force. I began to move slowly away, having acted upon what little material substance there was in the ether.

The stars were soon only a few feet apart below me, then a few inches, and suddenly, looking out beyond them, I was struck with the fact that they seemed to be a great group, isolated from a number of far distant blotches that were apart from these. The stars were moving with incredible swiftness now about a center near which was what I imagined to be the sun, though I had lost track of it somehow. They merged closer and closer together; the vast group shrunk more and more, until finally they had become indistinguishable as entities. They were all part of a huge cloud now, that seemed somehow familiar. What did it suggest? It was pale, diffused at the ends, but thick and white in the center, like a nebula—a nebula! That was it! A great light broke over me.

All these stars were part of a great system that formed a nebula. It explained the mystery of the nebulae.

And there were now other nebulae approaching, as this grew smaller. They took on the resemblance of stars, and they began to repeat the process of closing in as the stars had done. The stars, universes within universes! And those universes but nebulae in another great universe! Suddenly I began to wonder. Could there be nothing more in infinity than universe after universe, each a part of another greater one? So it would seem. Yet the spell was upon me and I was not ready to admit such simplicity yet. I must go on. And my earth! It could not even be found, this sphere that had itself seemed almost the universe.

But my growth was terribly fast now. The other nebulae were merging, it would seem at first, upon me. But my slow progress through space became faster as I grew larger, and even as they came upon me, like flying arrows now, I shot above them. Then they, too, merged. The result was a vast nucleus of glowing material.

A great light began to grow all about me. Above I suddenly observed, far away, a huge brightness that seemed to extend all over the universe. But it began definitely. It was as though one

were in a great ball, and the nebulae, a sunlike body now, were in the center. But as I became larger with every instant, the roof-like thing diffused, even as before things had converged, and formed into separate bodies, like stars. I passed through them finally, and they came together again behind me as I shot away, another great body.

A coincidence suddenly struck me. Was not this system of a great ball effect with a nucleus within similar to what the atom was said to be? Could the nucleus and its great shell be opposite poles of electrical energy, then? In other words, was this an electron—a huge electron composed of universes? The idea was terrible in its magnitude, something too huge for comprehension.

And so I grew on. Many more of these electrons, if such they were, gathered together, but my luck held and I passed beyond this new body thus formed—a molecule? I wondered. Suddenly I tired of the endless procession of stars coming together, forming ever into new stars that came together too. I was getting homesick. I wanted to see human faces about me again, to be rid of this fantastic nightmare. It was unreal. It was impossible. It must stop.

A sudden impulse of fear took earth again. All at once, I reached
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down, and pressed the central button to stop.

But just as a swiftly moving vehicle may not stop at once, so could not I. The terrific momentum of my growth carried me on, and the machine moved still, though slower. The stars seemed shooting upon me, closing about me. I could see no end of them before me. I must stop or they would be about me.

Closer in they came, but smaller and smaller. They became a thousand pinpoints shooting about me. They merged into a thick, tenuous cloud about me, thicker and thicker. I was shooting up now, but my growth had stopped. The cloud became a cold, clammy thing that yielded to the touch, and—and it was water! Yes, pure water! And I was floating in it....

Years. ...

Suddenly I shot up, out of the water, and fell back. Strength returned to me, and warmth, and love of life. It was water, something I knew, something familiar, a friend. And so I swam, swam on and on, until my feet touched bottom, and I was leaping forth out of the water, onto the sand....

III

There is no need to drag the tale out. I awoke finally from an exhausted sleep, and found myself in a world that was strange,

yet familiar. It might have been a lonely part of the earth, except for an atmosphere of strangeness that told me subconsciously it was another world. There was a sun, but it was far distant, no larger than my moon. And vast clouds of steam hung over the jungles beyond the sand, obscuring them in a shimmering fog, obscuring the sun so that it danced and glimmered hazily through the curtain. And a perpetual twilight thus reigned.

I tried to tell myself I was in some strange manner home. But I knew I was not. At last, breaking beneath the weight of homesickness and regret, I surrendered to a fit of weeping that shamed my manhood even as I wept. Then a mood of terrible, unreasoning anger against Fate enveloped me, and I stormed here and there about the beach.

And so, all through the night, I alternately wept and raged, and when the dawn came I sank again in peaceful slumber. . . .

When I awoke, I was calm. Obviously, in stopping I told myself I had been left in a cloud of atoms that proved to be part of another group of matter, another earth or atom, as you will. The particular atoms I was in were part of the ocean.

The only thing to do was to return. I was ashamed of my madness now, for I had the means of return. In the third button...

the bottom button. I saw no reason for delay. I splashed back into the water, and swam hastily out to the point where it seemed I had risen. I pushed the lowest button. Slowly I felt myself grow smaller and smaller, the sense of suffocation returned, only to pass away as the pinpoints shot about me again, but away this time. The whole nightmare was repeated now, reversed, for everything seemed to be opening up before me. I thrilled with joy as I thought of my return to my home, and the Professor again. All the world was friend to me now, in my thoughts, a friend I could not bear to lose.

And then all my hopes were dashed. How, I thought, could I strike my own earth again? For even if I had come to the right spot in the water to a certainty, how could I be sure I would pass between just the right cloud of molecules? And what would lead me to the very electron I had left? And, after the nucleus, why should I not enter the wrong nebula? And even if I should hit the right nebula, how should I find my own star, my own earth? It was hopeless, impossible! . . . And yet, so constituted is human nature that I could hope nevertheless!

My God! Impossible as it is, I did it! I am certain that it was my own nebula I entered, and I was in the center, where the sun

should be. It sounds fantastic, it *is* fantastic. The luck of a lifetime, an infinity, for me. Or so it should have been. But I looked where the sun ought to be found, in the central cluster. I halted early and watched long with a sinking heart. But the sun — was gone!

I lay motionless in the depths of space and I watched idly the stars that roamed here and there. Black despair was in my heart, but it was a despair so terrible that I could not comprehend its awfulness. It was beyond human emotion. And I was dazed, perhaps even a little mad.

The stars were tiny pinpoints of light, and they shot back and forth and all around like purposeless nothings. And ever would they collide, and a greater pinpoint would be born, or a thousand pieces of fragments would result. Or the two might start off on new tracks, only to collide again. Seconds it took them to cover what I knew to be billions of trillions of light-years.

And gradually the truth dawned upon me, the awful truth. These stars were suns, even as mine had been, and they grew and died and were reborn, it seemed now, in a second, all in a second. Yet fair races bloomed and died, and worlds lived and died, races of intelligent beings strove, only to die. All in a second. But it was not a second

to them. My immense size was to blame on my part.

For time is relative, and depends upon size. The smaller a creature, the shorter its life. And yet, to itself, the fly that lives but a day has passed a lifetime of years. So it was here. Because I had grown large, centuries had become but moments to me. And the faster, the larger I grew, the swifter the years, the millions of years had rolled away. I remembered how I had seen the streaks that meant the planets going about the sun. So fast had they revolved that I could not see the circuit that meant but a second to me. And yet each incredibly swift revolution had been a year! A year on earth, a second to me! And so, on an immensely greater scale, had it been as I grew. The few minutes that meant to me the sun's movement through the ether of what seemed a yard had been centuries to the earth. Before I had lived ten minutes of my strange existence, Professor Martyn had vainly hoped away a lifetime, and died in bitter despair. Men had come and died, races had flourished and fallen. Perhaps all mankind had died away from a world stripped of air and water. In ten minutes of my life. . . .

And so I sit here now, pining hopelessly for my Mother Earth. This strange planet of a strange star is all beyond my ken. The

men are strange and their customs curious. Their language is beyond my every effort to comprehend, yet mine they know like a book. I find myself a savage, a creature to be treated with pity and contempt in a world too advanced even for his comprehension. Nothing here means anything to me.

I live here on sufferance, as

an ignorant African might have lived in an incomprehensible, to him, London. A strange creature, to play with and to be played with by children. A clown... a savage...! And yearn as I will for my earth, I know I may never know it again, for it was gone, forgotten, non-existent a trillion centuries ago. . . !

THE END

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AMAZING STORIES

The popular author of Deathworld and Deathworld 2, those chilling portraits of hostile planets, here focuses his talent on a smaller but more vital subject: Sam Morrison, an unassuming college professor (Carteret, Miss.), just stopping between busses but carrying a simple cigar box that could have changed the world—if a far greater drama hadn't intervened.

Mute Milton

By HARRY HARRISON

WITH ponderous smoothness the big Greyhound bus braked to a stop at the platform, and the door swung open. "Springville," the driver called out, "Last stop!" The passengers stirred in the aisle and climbed down the steps into the glare of the sun. Sam Morrison sat patiently, alone, on the wide rear seat, waiting until the last passengers were at the door before he put the cigar box under his arm, rose and followed them. The glare of sunlight blinded him after the tinted glass dimness of the bus, and the moist air held the breathless heat of Mississippi summer. Sam went carefully down the steps, one at a time, watching his feet, and wasn't aware of the man waiting there until something hard pushed at his stomach.

"What business yuh got in Springville, boy?"

Sam blinked through his steel-rimmed glasses at the big man in the grey uniform who stood before him, prodding him with a short, thick nightstick. He was fat as well as big, and the smooth melon of his stomach bulged out over his belt worn low about his hips.

"Just passing through, sir," Sam Morrison said and took his hat off with his free hand disclosing his cut-short grizzled hair. He let his glance slide across the flushed reddened face and the gold badge on the shirt before him, then lowered his eyes.

"An' just where yuh going to, boy? Don keep no secrets from me . . .," the voice rasped again.

"Carteret, sir, my bus leaves in an hour."

The only answer was an uncommunicative grunt. The lead weighted stick tapped on the cigar box under Sam's arm. "What yuh got in there—a gun?"

"No, sir, I wouldn't carry a gun." Sam opened the cigar box and held it out: it contained a lump of metal, a number of small electronic components and a two-inch speaker, all neatly wired and soldered together. "It's a . . . a radio, sir."

"Turn it on."

Sam threw a switch and made one or two careful adjustments. The little speaker rattled, and there was the squeak of tinny music barely audible above the rumble of bus motors. The red faced man laughed.

"Now that's what ah call a real nigger radio . . . piece uh trash." His voice hardened again. "See that your on that bus, hear?"

"Yes, sir," Sam said to the receding, sweat-stained back of the shirt, then carefully closed the box. He started towards the colored waiting room, but when he passed the window and looked in, he saw that it was empty. And there were no dark faces visible anywhere on the street. Without changing pace Sam passed the waiting room and threaded his way between the busses in the cinder parking lot and out of the rear gate. He had lived all of his sixty-seven years in the State

of Mississippi; so he knew at once that there was trouble in the air—and the only thing to do about trouble was to stay away from it. The streets became narrower and dirtier, and he trod their familiar sidewalks until he saw a field worker in patched overalls turn into a doorway ahead under the weathered BAR sign. Sam went in after him; he would wait here until a few minutes before the bus was due.

"Bottle of Jax, please." He spread his coins on the damp, scratched bar and picked up the cold bottle. There was no glass. The bartender said nothing. After ringing up the sale he retired to a chair at the far end of the bar with his head next to the murmuring radio and remained there, dark and impenetrable. The only light came from the street outside, and the high-backed booths in the rear looked cool and inviting. There were only a few other customers here, each of them sitting separately with a bottle of beer on the table before him. Sam threaded his way through the close-spaced tables and had already started to slide into the booth near the rear door when he noticed that someone was already there, seated on the other side of the table.

"I'm sorry, I didn't see you," he said and started to get up, but the man waved him back onto the bench and took an airline

bag with TWA on it from the table and put it down beside him.

"Plenty of room for both," he said and raised his own bottle of beer. "Here's looking at you." Sam took a sip from his own bottle, but the other man kept drinking until he had drained half of his before he lowered it with a relaxed sigh. "That's what I call foul beer," he said.

"You seem to be enjoying it," Sam told him, but his slight smile took the edge from his words.

"Just because it's cold and wet—but I'd trade a case of it for a bottle of Bud or a Ballantine."

"Then you're from the North, I imagine?" Sam had thought so from the way he talked, sharp and clipped. Now that his eyes were getting used to the dimness, he could see that the other was a young man in his twenties with medium-dark skin, wearing a white shirt with rolled up sleeves. His face was taut and the frown wrinkles on his forehead seemed etched there.

"You are damned right, I'm from the North and I'm going back. . . ." He broke off suddenly and took another swig of beer. When he spoke again his voice was cautious. "Are you from these parts?"

"I was born not far from here, but right now I live in Carteret, just stopping off here between busses."

"Carteret—that's where the college is, isn't it?"

"That is correct. I teach there."

The younger man smiled for the first time. "That sort of puts us in the same boat; I go to NYU, majoring in economics." He put his hand out. "Charles Wright. Everyone but my mother calls me Charlie."

"Very pleased to meet you," Sam said in his slow, old-fashioned way. "I am Sam Morrison, and it is Sam on my birth certificate too."

"I'm interested in your college; I meant to step in there but . . ." He broke off suddenly at the sound of a car's engine in the street outside and leaned forward so that he could see out the front door, remaining there until the car ground into gear and moved away. When he dropped back onto the seat, Sam could see that there were fine beads of sweat in the lines of his forehead. He took a quick drink from his bottle.

"When you were at the bus station, you didn't happen to see a big cop with a big gut, red face all the time?"

"Yes, I met him; he talked to me when I got off the bus."

"The bastard!"

"Don't get worked up, Charles; he is just a policeman doing his job."

"Just a . . . !" The young man spat a short, filthy word. "That's Brinkley; you must have heard of

him, toughest man south of Birmingham. He's going to be elected sheriff next fall, and he's already grand knight of the Klan, a real pillar of the community."

"Talking like that's not going to do you any good," Sam said mildly.

"That's what Uncle Tom said—and as I remember he was still a slave when he died. Someone has got to speak up; you can't remain quiet forever."

"You talk like one of those freedom riders." Sam tried to look stern, but he was never very good at it.

"Well, I am, if you want to know the truth of it, but the ride ends right here. I'm going home. I'm scared and I'm not afraid to admit it. You people live in a jungle down here; I never realized how bad it could be until I came down. I've been working on the voter's committee, and Brinkley got word of it and swore he was going to kill me or put me in jail for life. And you know what—I believe it. I'm leaving today, just waiting for the car to pick me up. I'm going back north where I belong."

"I understand you have your problems up there. . . ."

"Problems!" Charlie finished his beer and stood up. "I wouldn't even call them problems after what I've seen down here. It's no paradise in New York—but you stand a chance of living a

bit longer. Where I grew up in South Jamaica we had it rough, but we had our own house in a good neighborhood and—you take another beer?"

"No, one is enough for me thank you."

Charlie came back with a fresh beer and picked up where he had left off. "Maybe we're second class citizens in the north—but at least we're citizens of some kind and can get some measure of happiness and fulfillment. Down here a man is a beast of burden, and that's all he is ever going to be—if he has the wrong color skin."

"I wouldn't say that; things get better all the time. My father was a field hand, a son of a slave—and I'm a college teacher. That's progress of a sort."

"What sort?" Charlie pounded the table yet kept his voice in an angry whisper. "So one hundredth of one percent of the Negroes get a little education and pass it on at some backwater college. Look, I'm not running you down; I know you do your best. But for every man like you there must be a thousand who are born and live and die in filthy poverty, year after year, without hope. Millions of people. Is that progress? And even yourself—are you sure you wouldn't be doing better if you were teaching in a decent university?"

"Not me," Sam laughed. "I'm just an ordinary teacher and I

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have enough trouble getting geometry and algebra across to my students without trying to explain topology or Boolean algebra or anything like that."

"What on earth is that Bool . . . thing? I never heard of it."

"It's, well, an uninterpreted logical calculus, a special discipline. I warned you; I'm not very good at explaining these things though I can work them out well enough on paper. That is my hobby, really, what some people call higher mathematics, and I know that if I were working at a big school I would have no time to devote to it."

"How do you know? Maybe they would have one of those big computers—wouldn't that help you?"

"Perhaps, of course, but I've worked out ways of getting around the need for one. It just takes a little more time, that's all."

"And how much time do you have left?" Charlie asked quietly, then was instantly sorry he had said it when he saw the older man lower his head without answering. "I take that back. I've got a big mouth. I'm sorry, but I get so angry. How do you know what you might have done if you had the training, the facilities" He shut up, realizing he was getting in deeper every second.

There was only the murmur

of distant traffic in the hot, dark silence, the faint sound of music from the radio behind the bar. The bartender stood, switched the radio off and opened the trap behind the bar to bring up another case of beer. From nearby the sound of the music continued like a remembered echo. Charlie realized that it was coming from the cigar box on the table before them.

"Do you have a radio in that?" he asked, happy to change the subject.

"Yes—well, really no, though there is an RF stage."

"If you think you're making sense—you're not. I told you, I'm majoring in economics."

Sam smiled and opened the box, pointing to the precisely wired circuits inside. "My nephew made this; he has a little I-fix-it shop, but he learned a lot about electronics in the Air Force. I brought him the equations, and we worked out the circuit together."

Charlie thought about a man with electronic training who was forced to run a handyman's shop, but he had the sense not to mention it. "Just what is it supposed to do?"

"It's not really supposed to do anything. I just built it to see if my equations would work out in practice. I suppose you don't know much about Einstein's unified field theory" Charlie

smiled ruefully and raised his hands in surrender. "It's difficult to talk about. Putting it the simplest way, there is supposed to be a relation between all phenomena, all forms of energy and matter. You are acquainted with the simpler interchanges, heat energy to mechanical energy as in an engine, electrical energy to light . . ."

"The light bulb!"

"Correct. To go further, the postulation has been made that time is related to light energy, as is gravity to light, as has been proven, and gravity to electrical energy. That is the field I have been exploring. I have made certain suppositions that there is an interchange of energy within a gravitic field, a measurable interchange, such as the lines of force that are revealed about a magnetic field by iron particles—no, that's not a good simile—perhaps the ability of a wire to carry a current endlessly under the chilled condition of superconductivity—"

"Professor, you have lost me. I'm not ashamed to admit it. Could you maybe give me an example—like what is happening in this little radio here?"

Sam made a careful adjustment, and the music gained the tiniest amount of volume. "It's not the radio part that is interesting—that stage really just demonstrates that I have detect-

ed the leakage,—no, we should call it the differential between the earth's gravitic field and that of the lump of lead there in the corner of the box."

"Where is the battery?"

Sam smiled proudly. "*That* is the point—there is no battery. The input current is derived . . ."

"Do you mean you are running the radio off *gravity*? Getting electricity for nothing?"

"Yes . . . really, I should say no. It is not like that . . ."

"It sure looks like that!" Charlie was excited now, crouching half across the table so he could look into the cigar box. "I may not know anything about electronics, but in economics we learn a lot about power sources. Couldn't this gadget of yours be developed to generate electricity at little or no cost?"

"No, not at once. This is just a first attempt. . ."

"But it *could* eventually and that means—"

Sam thought that the young man had suddenly become sick. His face, just inches away, became shades lighter as the blood drained from it. His eyes were staring in horror as he slowly dropped back and down into his seat. Before Sam could ask him what was the matter a grating voice bellowed through the room.

"Anyone here seen a boy by name of Charlie Wright? C'mon

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now, speak up. Ain't no one gonna get hurt for tellin' me the truth."

"Holy Jesus . . .," Charlie whispered, sinking deeper in the seat. Brinkley stamped into the bar, hand resting on his gun butt, squinting around in the darkness. No one answered him.

"Anybody try to hide him gonna be in trouble!" he shouted angrily. "I'm gonna find that black granny dodger!"

He started towards the rear of the room, and Charlie, with his airline bag in one hand, vaulted the back of the booth and crashed against the rear door.

"Come back here, you son of a bitch!"

The table rocked when Charlie's flying heel caught it, and the cigar box slid to the floor. Heavy boots thundered. The door squealed open and Charlie pushed out through it. Sam bent over to retrieve the box.

"I'll kill yuh, so help me!"

The circuit hadn't been damaged. Sam sighed in relief and stood, the tinny music between his fingers.

He may have heard the first shot, but he could not have heard the second because the .38 slug caught him in the back of the head and killed him instantly. He crumpled to the floor.

Patrolman Marger ran in from the patrol car outside, his gun ready, and saw Brinkley come back into the room through the door in the rear.

"He got away, damn it, got clear away."

"What happened here?" Marger asked, slipping his gun back into the holster and looking down at the slight, crumpled body at his feet.

"I dunno. He must have jumped up in the way when I let fly at the other one what was running away. Must be another one of them commonists anyway; he was sittin' at the same table."

"There's gonna be trouble about this. . . ."

"Why trouble?" Brinkley asked indignantly. "It's just anutha ol' dead nigger. . . ."

One of his boots was on the cigar box, and it crumpled and fractured when he turned away.

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MOSS ISLAND

By **CARL JACOBI**

Illustrator: **MOREY**

One of the more remarkable things about Carl Jacobi—author of Revelations in Black and Portraits in Moonlight—is the durability of his reputation as a writer. Never very prolific, over the years he has steadily turned out a score or so of carefully polished weird, fantasy, and science-fiction stories, many of which have a way of staying with his readers long after they've forgotten the more animated work of other writers. "Moss Island" is a good example of what we mean. Long after you forget its title, its author, even the magazine in which you first read it, you will remember Jacobi's disquieting description of an ominous, timber-covered island off the coast of New Brunswick—and of what almost happened there to a young geology student simply because he dropped his thermos bottle in a clearing at its center.

FIFTEEN MILES off the New Brunswick coast, to the south of Marchester yet north of Lamont, lies a great timber-covered rock which has become known as Moss Island. With its endless chain of reefs, its frowning sheer walls, and its bastions of dense underbrush and giant trees, the island has remained untrespassed and primeval. Fishermen fear its

jagged sides and keep well away. And as far as I have been able to learn, I am the only human being, or at least the only one for years, who has cared to visit its Eden shores.

For the sum of ten dollars, a little fishing smack had brought me out, had carefully threaded its way to a bit of beach on the western side.

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"You're a darn fool," the rather deaf owner of the boat had growled when we arrived. "I'm givin' ya fair warnin'. I'll keep my part of the bargain and come back for ya at five o'clock, but only if the weather permits. I'm not so crazy about the looks of that sky over there, and if there's anythin' stronger'n a breeze comes up—well, you can figure on stayin' here 'til it calms down. I ain't a-goin' through that bunch of saw-teeth in a wind for the fun of it. Not with *my* boat. Anyway, what's interestin' here? Nothin' on Moss Island but trees and rocks. Not even any moss no more. Somethin' killed it." He pointed to a smooth expanse of black rock, in places covered by a mass of last year's vines, dead and brown colored. One slab high above me looked like a woman with long, glowing hair, a great embossed Medusa, it seemed, when the wind ruffled the withered grasses.

"That's Mape vine, not moss," I corrected him. "There's probably lots of moss farther in where there's damp shade." I picked up my hammer, my chart-drawing board and my knapsack and stepped from the boat, adding: "I'm going to do a little geological survey work, examine the rock formations, you know; and I don't think we'll have a storm. The weather report didn't say so."

He gave a derisive humph, whether at the nature of my work or my remark about meteorology I was left wondering, for without another word he shoved off. For a while I watched the boat bobbing away through the white caps, the little sail growing smaller and smaller and showing clean white in contrast to the green water and the blue sky. Then I turned to my surroundings.

I was still below the island proper, the cliff running some thirty to fifty feet up to the edge of the woods. In some places the wall was almost perpendicular, and I looked about for means of climbing it. Farther on along the beach I came upon a break and a series of jags which, with a little maneuvering, would serve as a staircase. I began my ascent. It was hard, slow work. Gulls whirled about me at my interruption, filling the air with their clamor. Ensnarled Mape vine impeded my progress, and clumps of scarlet bush, which seemed to thrive on the scant nourishment it found in soil-filled crevices, dug its thorns relentlessly into my hands. Upon a little jutting shelf I saw a dead snake, its head hanging into space as though watching something below.

At length I reached the top, which I found to be flat as a plateau, the surface from the edge of the cliff quite void of vegeta-

tion for a distance of about five yards, when abruptly began a wall of trees, the outer ones bearing evidence of the ravages of the elements. Peering off to sea again, I tried to catch sight of the boat that had brought me, but though I looked until the air before my eyes appeared porous, I could see no sign of it.

Striving to throw off a growing feeling of depression, I broke out into a loud whistle, following any tune my lips desired. The whistle seemed to travel for miles in the clear air. It rose above the trees and went far over the island. There was no echo. Only the waves washed over rocks below me, and as I walked along, the screaming cries of a solitary gull fell perfectly into the rhythmic cadence of my steps.

I kept close to the edge of the cliff. To have attempted penetrating that jungle of growth would have been foolhardy. So I watched for a place where the trees might thin down, reflecting idly that the glacial drift must be of a considerable depth to support such extensive vegetation. About half a mile onward I found some pieces of shale with a few shell fossils and a small slab of limestone with remarkably clear impressions of crinoids. These ancient forms of marine life I determined to be of the Mississippian geologic period.

But for some reason I lost

interest in my work. The very solitude of the island seemed to have crept into me and dulled my senses. Occasionally I was forced to enter the wood to circle a mound of larger rocks that defied ascent. Occasionally I caught the glint of the sun shining upon the bloated body of a dead fish lying far below on the little stretch of sand. And although I had gone only a short distance, all the while the weight of my knapsack seemed steadily increasing.

By three o'clock I had almost reached the opposite side of the island. It was there on the eastern exposure that I came upon a sheer wall, a rock formation that would have delighted the most experienced geologist. Here with the Pennsylvania strata folded and resting upon the eroded edges of the Mississippian was a great sedimentary history of geologic time.

For a long while I examined the wall—from its base upward as high as I could reach. At length, taking my hammer, I began working on a rather peculiar outcropping vein or rather a slight discoloration on the rock. Strange enough, as I went deeper the color changed: from a dark brown at the surface to a reddish brown and from a reddish brown to a deep scarlet. If this were oxidation....but no....And then suddenly my hammer broke through—

into a cavity in the limestone, a large hole which had been hollowed out by the ground water slowly filtering through the rock crevices and in the course of time dissolving the soluble parts. Such cavities are common to limestone, I knew, but sometimes rather interesting phenomena accompanies them. And so with a feeling of expectation I went to work with a will, enlarging the aperture until it was wide enough to thrust in my hand.

I extended my arm into the opening gently, clawed air for a moment, and then reaching downward, felt a cold sticky liquid touch the fingers. Hastily I drew my hand to sight. It was dripping with a brownish, viscous solution that had a musty odor. I stared in amazement. Pockets of mineral water are not uncommon in this district, but always it is clear and transparent. Never had I come upon any liquid formation in such a mucilaginous state.

The thought of oil flashed across my mind. I cast it aside with a sheepish smile. There is no oil on the New Brunswick coast nor for thousands of miles in any direction. And this brownish mass in no way resembled crude petroleum. It was very odd.

And then quite suddenly I remembered a recent conversation with Professor Monroe at the University of Rentharp, where

I am doing graduate work in geology and mineralogy.

"Phillip," he had said when I came upon him in one of the laboratories before a table of vials, tubes, and instruments, "Phillip, I believe I've made a discovery." And while he worked he had told me in his short, jerky, nervous manner about muscivol, the name which he had given to his find. "It is very rare," he had said, "rarer than radium."

I have always been interested in botany and I have a fair knowledge of the subject, but I confess some of his scientific explanation went over my head. This much, however, I roughly gathered:

In northern climates, under favorable conditions, can be found a rare moss which resembles and yet fundamentally differs from the common *Saelania* moss. After living in great luxuriance for a number of seasons, this *Musci* plant will suddenly die. If the diseased plant is examined just before its death, it will be found that almost a reversal of the natural processes of growth is going on.

A month earlier a small blister or pouch develops just above the rootlets. And for some unknown reason most of the food elements which the plant obtains from the soil and from the air, instead of serving to nourish the whole plant, gather and centralize in this pouch in liquid form.

The rest of the plant is thus robbed of its food; it can no longer live healthily, and growing in damp places as it does, it is slowly overcome by rot.

The decay affects the contents of the pouch. The liquid goes through a process of fermentation, though that is hardly the correct term. At length, however, the pouch bursts and the liquid soaks into the soil.

If a large number of these diseased moss plants are present, the ground will be almost saturated with the liquid. In time—always under favorable conditions—the liquid will soak down until it reaches and becomes a part of the ground-water—that is: the water in the solid rock below the surface which one taps when digging a well.

Limestone is full of subterranean cavities. The water carrying this plant-liquid in solution may find one of these, enter it, and become stagnant. Gradually the cavity deep down in the rock will be filled with the pouch-liquid of hundreds of these diseased mosses. And what is equally important with it will be certain amounts of mineral matter which is always present in the ground-water.

"Nowhere can it be found in the same intensity," Professor Monroe had said, "and in no two places is it really the same, for the mineral matter in the

solution will always vary."

"Well, what good is it?" I had asked, rather bored by his long explanation.

The professor had put down his test tube, leaned across the laboratory table and said slowly: "I have discovered by accident that sometimes this liquid—Muscivol, I have called it—sometimes it contains all the elements of growth."

"What do you mean?" I asked, puzzled.

"I mean that if I apply a small quantity of it that has the right amount of mineral matter in solution to the original moss plant, one in healthy condition, its rate of growth will be speeded up tremendously. I mean that the few drops of Muscivol I have been able to find when placed on the stalk of a moss plant caused it to leap upward to twice its original size in a few seconds."

And as I stood there on the cliff, staring at my dripping fingers, it all came back to me. With a start I realized that this must be a *vug** of Muscivol, that rarest of liquids, the essence of moss growth. In haste I emptied the coffee from my thermos bottle and, using the cover as a cup, carefully reached into the

* A *vug* is a term used in mining to indicate a small, unfilled cavity in a vein or in the surrounding rock.

cavity and with the utmost care began the process of capturing as much of the sticky fluid as I could. I smiled to myself as I pictured Professor Monroe's surprise and delight when I brought him this find. The most he had been able to discover was a few drops, while here was almost a quart. True, I did not know as yet if it contained the necessary mineral matter to make it potent. That I must leave to the professor and his test tubes. When I had filled the thermos bottle, I carefully closed it and placed it in my knapsack.

The next hour I spent in making a rough chart of the sedimentary wall before me and writing in my notebook a brief geologic description of the island. All this, of course, was part of my university work. At length, the brief survey completed, it occurred to me that I still had time for further exploration before the boatman would return, and so shouldering my knapsack, I headed into the interior.

In a moment, as though a mighty door were shut, the woods closed dark upon me, and I found myself in a jungle of growth that discouraged further penetration. Gradually, however, as I struggled forward, the underbrush, finding insufficient sunlight to exist, thinned down until there were left only trees and moss. The strange, luxuriant

abundance of the latter accounted, I saw, for the island's name. Fern moss, Long moss, Urn and Cord moss, *Catharinaea angustata*, *Polytrichum strictum*, and tree moss—in every division common to the northeastern United States the *Musci* order here was represented.

On rotting logs, at the foot of trees, in parasitical clumps upon the trunks, and on the ground as a soft carpet of damp green—everywhere was moss. With its perpetual damp and shade and its moist sea air, the island seemed to present strangely perfect conditions for this plant.

The wood was silent about me now, and only occasionally, when the tessellation of verdure above became less dense, could I see the light of the sky. As I went deeper, the trees seemed to take definite positions in the forest about me, to form long, dark corridors with winding turns. The mosses lost their dark greenish hue and developed into a bluish yellow, a sickly yellow in the gloom. The air was moist and warm. It weighed heavily upon my lungs and seemed to throw a great torpor over my body. I wiped the perspiration from my forehead and went on. The island, it appeared, was infested with blue jays, jays strangely fat and overnourished. Great flocks of them rose up at my approach, their screaming

cries filtering slowly through the sodden air like the death wails of a thousand drowning cats.

But as I went farther and farther, even they disappeared, and I was left with only the walls of trees, the floor of moss and the gloom. I saw more varieties now: Shaggy moss, Hooked moss, and Hair-capped moss. Yellowish plants, they were, sickly and flaccid in the half light.

At random I chose one of the corridors through the trees and made my way slowly forward, my steps velvety in the soft grasses. Winding, yet going ever deeper into the interior, the wall-ed lane stretched before me like a living gallery. The intertangle-ment of foliage far above was heavy and dense, admitting no light but only a strange green glow. An odor of rot rising from the earth crept into my nostrils, and I began to breathe with difficulty.

It was a quarter after four by my watch when I reached a point where the trees opened abruptly onto a little glade. Roughly estimating this to be about the heart, the center of the island, I was about to turn and retrace my steps when a mass of white at the far side of the open space caught my eye. I stepped forward and found myself gazing at a great circle of densely packed *White Moss*. For some moments I stood there, looking down at

the cushion-like tufts as a wave of loathing slowly rose within me.

The species I had recognized as what is technically known as *Leucobryum glaucum*, a *Musci* plant common enough in moist woods, but for some reason, whether because of its contrast to the green and yellow moss on all sides or the anemic pallor of its gray whiteness, I viewed it here with a feeling of utter revulsion. There was something repulsive about the very way it sprawled across the glade.

During all this time, with the enthusiasm of exploration, I had almost forgotten my finding of the liquid in the limestone cavity. Now, however, I felt a sudden desire to prove to myself beyond a doubt that the solution really was *Muscivol*, by observing how this moss plant would react to a few drops. Quickly I unfastened my knapsack, drew forth the thermos bottle, and unscrewed the cap. Then carefully tilting it over the matted circle of white moss, I let a small amount of the brownish liquid fall.

The result was amazing. The plant quivered a half moment, then shot upward with terrific growth rate. Unconsciously I jumped back. My foot caught in a bramble. I lost my balance and fell full length. The thermos bottle bounced from my hand, rolled across the ground straight in to the *White Moss* plant, and

there the viscous contents began to pour forth.

With a cry of dismay I realized what had happened. A quart of *Muscivora* was upon the plant, a quart where a few drops had been multipotent. A great shudder ran through the moss. A sobbing sigh came from its grasses. And then with a roar, the rootlets gouged down into the ground, tore at the soil, and the plant with a mighty hiss raced upward, five feet, ten feet. The tendrils swelled as though filled with pressure, became fat, purulent, octopus folds. Like the undulations of some titanic marine plant the white coils waved and lashed the air. Up they lunged, the growth rate multiplied ten thousand times.

A tentacle in its mad gyrations brushed my face. I screamed in horror, turned to the wood and ran—down the long corridors, the lanes, the galleries, through the trees. Behind me the roar rose into a great thunder; the hissing stabbed the air like escaping steam. On through the dark woods I raced, a wave of wild fear surging over me. Looking over my shoulder, I could see the white moss with coils like cables now, climbing over the trees, advancing with frightful velocity. *Muscivora*! What fiendish chemical was this that could destroy the very laws of nature? The black boles of the trees like shrouded phan-

tasms leered at me in mocking answer as I lunged by them. A great wail rose up as a thousand terrified blue jays flapped away in a mad hegira for safety. The forest was endless. Miles I seemed to have run, but with a heart pounding trip-hammer pulsations I tore on even faster toward the cliff.

At length I reached it, emerged into the open air, but found the day not as I had left it. A heavy fog had rolled in from the sea, had thrown a veil over the entire coast.

I did not stop. To the rear the wall of white was lunging over the island now like a tidal wave. Came the repercussions of the crashing of trees, snapping under the great weight of the moss. The growth fulminations pounded against my ear drums until they seemed ready to crack. Along the cliff, through the thickening fog, I ran. And suddenly a fearful thought came to me. Suppose the boatman had not returned? Plangent and insanely insistent, the question beat through my brain. I could see myself being crushed, strangled, smothered in those white folds.

Again I looked back. Again I screamed in stark horror. With frightful rapidity the advancing moss was gaining on me. Like an octopus the tentacles were clawing the sky, engulfing the whole island. And now the ground

beneath my feet, torn and ruptured by the distant moss roots, began to shake in cataclysmic convulsions.

But at length I reached the break in the cliff where I had made my ascent from the beach. I ran to the edge and peered over. The boat was there! Through the haze of the fog I could see it drawn up on the sand, the boatman placidly smoking his pipe, waiting. Never was a sight more welcome, and with a prayer of thanks I leaped to the jags in the rock sides and began my descent. Going down was harder than coming up. Twenty times I saved myself from falling only by grasping the Mape vine coils. The thorns of the scarlet bushes stabbed to the bone.

How I ever reached the bottom safely I don't know. I remember running wildly across the beach

to the boat, climbing in, and shouting something unintelligible to the astonished boatman. And then we were out on the water, heading into the fog, the cool salt air fanning my face.

I came to my senses finding the old man chafing my wrists.

"What in thunder happened?" he asked. "What's the matter?"

I stood up in the rocking boat. Vaguely, indistinctly through the haze I could see the great bulk of the island a half mile to our lea.

"That moss!" I cried, "that wall of white moss! Don't you see it?"

He stared over the water, squinting his eyes. "Moss?" he repeated slowly. "Did you say moss?" and he turned to me with a queer look.

"I don't see no moss," he said. "All I can see is fog, white fog."

THE END

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Editorial (Continued from page 4)

ous about every new story that a favorite writer turns out, even though they no longer feel that he writes especially for them.

But what response *can* the S-F magazine make to this tendency to dilute the very thing for which it exists? Well, it could turn away completely and limit itself entirely to stories that only veteran readers would enjoy—or understand. But that's too introverted and would only shrink the field even moreso than it already has. Or it could give in and publish whatever competent writers produce, even though most of it is not meant for us. But that way, too, leads to extinction, for the science-fiction magazine would then become merely an adjunct of the paperback field. Finally, though, it could do what we here at *Amazing* are trying: it could publish a mixture of the very best of the new material—such as Murray Leinster's "Killer Ship" and Arthur C. Clarke's "Sunjammer"—and some of the best of the older stories written in a day when writers had a much closer relationship to their readers than they seem to now.

And then, who knows? Maybe if this combination of entertaining science fiction—from the present and the past—catches on with enough new readers, as it seems to be doing, then perhaps one day some of those really talented S-F writers will look back and find an audience grown larger than when they left it. *Then* maybe they'll think once more of writing the kind of story that can only be written when a writer knows that his readers expect him to top himself each time out.

—JR

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PRESSURE

By ARTHUR PORGES

Once again the crew of the scoutship Herschel faces death—until the fertile brain of Ensign de Ruyter, encouraged by hunger, finds a way out.

UNDER this tough, homogeneous, basaltic-like rock—which is thirty inches thick, by the way—” Ensign De Ruyter said dreamily, “is a pool of the rarest mercury isotope known to science. According to my little geological magician here—” he patted the gleaming cubical test-instrument, a small miracle of electronics, gravitronics, sonics, and graser *—“it measures about the size of a hemisphere forty feet in diameter. Think of the number of cubic feet! Think of the fat bonus our heirs will collect!”

“By the time they ever find us—or rather our remains,” Lieutenant Burton said in a dry voice, “our heirs will have heirs, unto the Nth generation.”

“That bad, eh?” Captain Morse asked. Not that he had any reason to doubt it.

“That bad,” his executive and

engineering officer said. “We’re stranded on a two-bit planet of a dust-speck sun in a misbegotten little galaxy. The thrust-bearing has lost its collar, which has a crack not so deep as a well, but ’twill serve. For the benefit of you two illiterates, that’s a steal from Shakespeare, who wrote so long ago that we know little but his name—and his work, which is incomparable but not as easily absorbed as audio-visual-brain-wave imagery. Hence, few bother.”

“You were saying—about that bearing,” Morse pointed out, keeping his tone offensively neutral.

Burton was unabashed. Discipline in these three-man scouts was traditionally informal, as in submarines of the early days on earth, but none the less effective

**Gravity Amplification by Stimulated Emission of Radiation.*

when the chips were down. On this ship, *HERSCHEL*, there was even less need for a strict rule-book operation, since the three officers liked and respected each other more than many brothers.

"I only thought," he drawled, "that a little education might be in order, since we're not going any place."

"Education is what I'm after," the captain said sweetly, "but not literary. I'd like to know just why my engineering officer has given up on the thrust bearing."

"Yes, sir!" was the reply, exaggeratedly military. "It's like this. I can fix the collar, although even there it's not a sure thing. It has to take a terrific strain when we space-warp into overdrive—but you know that."

"That much I know," Morse said. "Even pilots get some engineering fundamentals. Believe it or not, there was a time I could dismantle the power-plant myself."

"We don't use steam any more," Burton said, and De Ruyter gave him a queer glance. Only nineteen, the ensign had plenty of courage—nobody got through the screening to cadet without it—but even so the cool badinage of the two veterans, considering their desperate plight, was a revelation to the boy.

"I'll note that insolence for the inevitable and deserved court-

martial", the captain said. "But unless you get us back to base, there won't be one, what with no other senior officers here. And if you get us back," he pointed out gravely, "the charge would have to be withdrawn, in view of your saving our lives. That should give you some incentive, Lieutenant!"

"Why? It adds up to no court-martial in either case. But enough small talk—sir! As I was saying, the collar can be fixed with a cold weld—the Bascomb type. It should hold long enough to get us back. But—aber—mais—to get the collar back on the bearing calls for a fifty-ton squeeze. Any looser fitting, and when you shift to overdrive, said collar will certainly slip. And if it moves a millimeter while we're warping, the three of us will look like bloody Klein bottles, with our guts a nice, messy demonstration of topology—inside-outside, left-to-right, mirror-image, one surface, all in a single juicy mixture."

"We have the latest power screw-jack."

"True. But it's good for only five tons. Maybe I could overload the thing, and build up another two or three, but that wouldn't help a bit."

WHAT about adding a ten-foot lever set-up?" De Ruyter said.

"Good thinking, Ensign! Only," Burton said, "we haven't anything in that length that wouldn't bend like a wet noodle before the collar slid into place."

"Plenty of other power," Morse said. "What about heating the collar—or freezing the shaft?"

"Heating the collar's out—that's why I mentioned a cold weld. Heat would ruin its temper, and we'd be as badly off as going into overdrive without any bearing. That is to say, suicide. As for freezing, that would be great, except that these new Mark IX bearings are invarium gamma, with a coefficient of expansion—or contraction, to coin a term—of six times ten to the minus twenty-fifth. You could take this baby to absolute zero, and only a spectral interferometer would show a fringe-shift or two of volume decrease."

"You're not very encouraging," the captain said. "But all too lucid." He looked at De Ruyter. "What does our communications officer have to say?"

The boy shook his head.

"Not much, sir. There's nobody scheduled to be in this space block for months—maybe years. Our food, of course, won't last more than ninety days; and the planet's all rock—like this cavern we're in now." He gestured towards the black, smooth walls revealed by their light-packs on

the level floor. The low roof of the cave was of the same heavy, slick mineral. "Of course, we could take off in normal drive, but the nearest star that might have planets is three light years away, and at our maximum speed of two hundred plus miles a second—you see that wouldn't help. We'd die of old age before even getting close. And even if the lieutenant could beef up that drive, and bring us to a planet in ten years, it might be as worthless as this one, for all we know. This part of space is still terra incognita."

"Incognita, yes; terra, no," Burton said. "Your Latin's lousy, son."

"Then as it stands," Morse said slowly. "We can stay here, or in the ship, or take off in a pointless way for nowhere. In each of those unpleasant choices, we last as long as our food. With power, we can make air indefinitely, of course. This atmosphere is safe to breathe for a long time, even if the oxygen is low, and the ammonia taint no joy."

"It doesn't matter," De Ruyter said, "but that ammonia trace could kill us—lung irritation—after a year or two."

"All right," the captain said, his voice holding a new crispness. "It's up to me to make the decisions. I don't care to wait for starvation to kill me. We'll put

the collar on as tightly as the screw-jack can do it, take off, and go into overdrive at the normal range from the planetary mass."

"It's suicide," Burton said, "but quick and painless—at least, I hope so. People who went into space-warp with faulty equipment never were able to tell us how it felt to be twisted into several dimensions at once; but how bad can anything be that happens in a small part of a micro-microsecond?"

"Maybe time is also messed about," Morse said. "So that a microsecond seems like a year."

"Ouch!" Burton replied.

"But I wasn't thinking of suicide," the captain said. "Rather of a chance, however small, against no chance at all. It is possible," he asked, "that the collar might hold, isn't it?"

The lieutenant looked at him for ten long seconds. Then he said quietly, "No, I'm sorry, Cal—not a prayer. If I could force it on under, say, forty tons, there might be an outside chance, but never with only five. It would be like expecting a .22 shell to have good ballistics through a .30 caliber rifle. Far too much play."

They both looked at De Ruyter, who had cleared his throat noisily.

"Yes, Ensign?" Morse said.

"I agree with both of you, only —" He hesitated.

"What De Ruyter means, I think," Burton said, "is that we needn't take off this minute, right?"

"That's right," the ensign said, relieved. "We may be able to figure something out; there's still almost ninety days to go—on the food, I mean."

"You're wrong," Morse said evenly. "There's a hundred and eighty. We go on half rations while looking for an out. I didn't mean to give anybody the idea I wanted to leave at once. We'll give it a real college try. It's just that I like to plot my course clearly in advance. So," he added dryly, "there will be time to make full use of De Ruyter's legendary ingenuity." He grinned, taking the sting out of his last remark.

"You heard the captain," Burton said. "We can't get old HERSCHEL into overdrive, but your brain's still in working order, so get at it, boy!"

FOR the first thirty days they were full of hope; it didn't seem possible that three highly intelligent and superbly trained men, with a ship-full of excellent equipment, could fail to solve so simple a problem. It was just a matter of obtaining fifty tons of smooth, controlled force, but they were stopped cold. It was easy to get the fifty tons, but only from some kind of explosive reaction that was completely un-

suiting for the delicate placement of the welded collar. On the other hand, the screw-jack could be used to compress the shell of an egg without cracking it, so precise were its controls, but beyond six tons—an overload—it showed signs of burning out, and had to be turned off.

Nor did the scanty food-ration help; they were hungry all the time, and losing strength. They had no further thought for the cavern, with its fortune in mercury; a bonus was no good to dead men.

On the sixty-eighth day, haggard and grim, they held a policy conference.

"We're getting too weak," the captain said bluntly. "I think we'd better go back on full rations for a few days—to build up some strength, just in case—and then shoot the works on the loose collar. Give it all the screw-jack can produce by burning it out, and then take off."

"That suits me," Burton said. "Right now, a full meal seems more important than a few more days of life—if you call this life. A planet that's bare rock on top, and mercury pool underneath. If we were like those mineral silicon "plants" on Cuvier, we could at least guzzle mercury; they thrive on it. Bit heavy on the stomach, for mine." He managed a weak grin, directed at De Ruyter. "The kid's failed us, Cap-

tain. Never thought it would happen. Maybe we should use the screw-jack on his head—put enough pressure on De Ruyter, I've noticed, and he comes up with an answer. Like with the urn, and the prayer wheels, and then his mighty solenoid that stopped a war. Pressure on De Ruyter," he said, a little muzzily. "And that's what we need—just pressure; fifty tons of it."

The boy was sitting tensely upright, his eyes shining feverishly.

"Captain," he said in a hoarse voice, almost a whisper. "I just got an idea. It could work—it has to work. In the cavern; the mercury." Then he fell back, out cold.

It is doubtful if any junior officer had ever been so solicitously revived by his seniors before. They worked over De Ruyter as if he had been Galactic President instead of a new ensign. When he came to, and told them his plan, they looked at each other in pregnant silence for some seconds. Then—

"Holy jumping trilobites!"

"Great galloping gildabs!"

The exclamations came with perfect simultaneity.

"The kid's got it, I think," Burton said.

The captain, only a trifle less exuberant, said: "It looks that way; damned if it doesn't. Let's get moving. I'd like to go home."

"My advice, captain," the lieutenant said, licking his lips, "is that we have a real feed first; we'll need all our strength, for one thing. Besides, you did say full rations, remember?"

As they ate, the three men worked out details of the scheme so thoroughly that the actual work went as smoothly as if rehearsed. Using power drills, they made two circular shafts, some ten yards apart, through the rock floor of the cave to the mercury pool. One of these had a diameter of fifteen inches—the exact dimensions of the thrust bearing; the other a diameter of only three inches. Both shafts, piercing thirty inches of dense rock, were highly polished by the superb drills, which had cutting elements many times harder than diamond.

Then, using small but immensely strong power hoists, the bearing was lowered into the larger shaft, to rest on top of the mercury below, where it floated, sticking some eight feet into the cave. The collar, braced against a smooth area on the roof, was centered over the top of the bearing. Through the smaller hole they passed a rod of tough alloy steel, ground until it was a perfect, leak-proof fit. The screw-jack, braced against the ceiling, rested on top of the rod.

When De Ruyter gave the

word, Burton turned on the jack; it pressed down on top of the rod, building up to its full five-ton load. The rod, in turn, sliding through the leak-proof shaft, bore down on the incompressible liquid metal below. The pressure was transmitted, with almost no loss, to the much larger face of the bearing, which rested on the mercury through the other shaft, ten yards away. Since the surfaces bore a ratio of 225 to 9, that was how much the improvised hydraulic press multiplied the power of the jack—the five tons at the rod became 125 tons at the bearing. Which was far more than needed for a tight fit; the bearing rose to slide easily into the collar.

They took off the next morning, still haggard and weary in appearance, but with a totally different look on their faces. They were going home, now, and would make it.

"I said, 'Put enough pressure on De Ruyter,' didn't I?" Burton grinned. "We did—or circumstances did—and in turn, he put pressure on the bearing. Not directly, of course, but through mercury."

"De Ruyter's our communications officer," Morse said quietly. "Wasn't Mercury the messenger of the gods?"

"Who's educating us now?" Burton said.

THE END

Although primarily a poet and writer of weird tales, the late Clark Ashton Smith—author of Out of Space and Time and Lost Worlds—also did some very fine science-fiction stories that show what can happen to some of the most traditional S-F themes when a poet turns to them. "The City of the Singing Flame," for example, has an almost hallucinatory power, a visionary quality that grows stronger each time we reread it. So does "The Plutonian Drug" (the only story Smith ever did for Amazing), which is about a sculptor named Balcoth, who began the evening simply enough—with an interesting little experiment involving a drug from the planet Pluto—but ended it, suddenly, in the shadows of a 21st century alleyway.

The Plutonian Drug

By CLARK ASHTON SMITH

IT is remarkable," said Dr. Manners, "how the scope of our pharmacopoeia has been widened by interplanetary exploration. In the past thirty years, hundreds of hitherto unknown substances, employable as drugs or medical agents, have been found in the other worlds of our own system. It will be interesting to see what the Allan Farquar expedition will bring back from the planets of *Alpha Centauri* when—or if—it succeeds in reaching them and re-

turning to earth. I doubt, though, if anything more valuable than selenine will be discovered. Selenine, derived from a fossil lichen found by the first rocket-expedition to the moon in 1975, has, as you know, practically wiped out the old-time curse of cancer. In solution, it forms the base of an infallible serum, equally useful for cure or prevention."

"I fear I haven't kept up on a lot of the new discoveries," said Rupert Balcoth the sculptor,

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Manners' guest a little apologetically. "Of course, everyone has heard of selenine. And I've seen frequent mention, recently, of a mineral water from Gany-mede whose effects are like those of the mythical Fountain of Youth."

"You mean *clithni*, as the stuff is called by the Ganymedians. It is a clear, emerald liquid, rising in lofty geysers from the craters of quiescent volcanoes. Scientists believe that the drinking of *clithni* is the secret of the almost fabulous longevity of the Gany-medians; and they think that it may prove to be a similar elixir for humanity."

"Some of the extraplanetary drugs haven't been so beneficial to mankind, have they?" queried Balcoth. "I seem to have heard of a Martian poison that has greatly facilitated the gentle art of murder. And I am told the *mnophka*, the Venerian narcotic, is far worse, in its effects on the human system, than is any terrestrial alkaloid."

"Naturally," observed the doctor with philosophic calm, "many of these new chemical agents are capable of dire abuse. They share that liability with any number of our native drugs. Man, as ever, has the choice of good and evil. . . . I suppose that the Martian poison you speak of is *akpaloli*, the juice of a common russet-yellow weed that

grows in the oases of Mars. It is colorless, and without taste or odor. It kills almost instantly, leaving no trace, and imitating closely the symptoms of heart-disease. Undoubtedly many people have been made away with by means of a surreptitious drop of *akpaloli* in their food or medicine. But even *akpaloli*, if used in infinitesimal doses, is a very powerful stimulant, useful in cases of syncope, and serving, not infrequently, to re-animate victims of paralysis in a quite miraculous manner.

"Of course," he went on, "there is an infinite lot still to be learned about many of these ultra-terrene substances. Their virtues have often been discovered quite by accident—and in some cases, the virtue is still to be discovered.

"For example, take *mnophka*, which you mentioned a little while ago. Though allied, in a way, to the earth-narcotics, such as opium and hashish, it is of little use for anaesthetic or anodyne purposes. Its chief effects are an extraordinary acceleration of the time-sense, and a heightening and telescoping of sensations, whether pleasurable or painful. The user seems to be living and moving at a furious whirlwind rate—even though he may in reality be lying quiescent on a couch. He exists in a head-long torrent of sense-impres-

sions, and seems in a few minutes, to undergo the experiences of years. The physical result is lamentable—a profound exhaustion, and an actual aging of the tissues, such as would ordinarily require the period of real time which the addict has 'lived' through merely in his own illusion.

"There are some other drugs, comparatively little known, whose effects, if possible, are even more curious than those of *mnophka*. I don't suppose you have ever heard of plutonium?"

"No, I haven't," admitted Balcoth. "Tell me about it."

"I can do even better than that—I can show you some of the stuff, though it isn't much to look at—merely a fine white powder."

Dr. Manners rose from the pneumatic-cushioned chair in which he sat facing his guest, and went to a large cabinet of synthetic ebony, whose shelves were crowded with flasks, bottles, tubes and cartons of various sizes and forms. Returning, he handed to Balcoth a squat and tiny vial, two-thirds filled with a starchy substance.

"Plutonium," explained Manners, "as its name would indicate, comes from forlorn, frozen Pluto, which only one terrestrial expedition has so far visited—the expedition led by the Cornell brothers, John and Augustine,

which started in 1990 and did not return to earth till 1996, when nearly everyone had given it up as lost. John, as you may have heard, died during the return voyage, together with half the personnel of the expedition: and the others reached earth with only one reserve oxygen-tank remaining.

"This vial contains about a tenth of the existing supply of plutonium. Augustine Cornell, who is an old school-friend of mine, gave it to me three years ago, just before he embarked with the Allan Farquar crowd. I count myself pretty lucky to own anything so rare.

"The geologists of the party found the stuff when they began prying beneath the solidified gases that cover the surface of that dim, starlit planet, in an effort to learn a little about its composition and history. They couldn't do much under the circumstances, with limited time and equipment; but they made some curious discoveries—of which plutonium was far from being the least.

"Like selenine, the stuff is a by-product of vegetable fossilization. Doubtless it is many billion years old, and dates back to the time when Pluto possessed enough internal heat to make possible the development of certain rudimentary plant-forms on its blind surface. It must have

had an atmosphere then; though no evidence of former animal life was found by the Cornells.

"Plutonium, in addition to carbon, hydrogen, nitrogen and oxygen, contains minute quantities of several unclassified elements. It was discovered in a crystalloid condition, but turned immediately to the fine powder that you see, as soon as it was exposed to air in the rocketship. It is readily soluble in water, forming a permanent colloid, without the least sign of deposit, no matter how long it remains in suspension."

"You say it is a drug?" queried Balcoth. "What does it do to you?"

"I'll come to that in a minute—though the effect is pretty hard to describe. The properties of the stuff were discovered only by chance: on the return journey from Pluto, a member of the expedition, half delirious with space-fever, got hold of the unmarked jar containing it and took a small dose, imagining that it was bromide of potassium. It served to complicate his delirium for a while—since it gave him some brand-new ideas about space and time.

"Other people have experimented with it since then. The effects are quite brief (the influence never lasts more than half an hour), and they vary considerably with the individual.

There is no bad aftermath, either neural, mental or physical, as far as anyone has been able to determine. I've taken it myself, once or twice, and can testify to that.

"Just what it does to one, I am not sure. Perhaps it merely produces a derangement or metamorphosis of sensations, like hashish; or perhaps it serves to stimulate some rudimentary organ, some dormant sense of the human brain. At any rate there is, as clearly as I can put it, an altering of the perception of time—of actual duration—in to a sort of space-perception. One sees the past, and also the future, in relation to one's own physical self, like a landscape stretching away on either hand. You don't see very far, it is true—merely the events of a few hours in each direction; but it's a very curious experience; and it helps to give you a new slant on the mystery of time and space. It is altogether different from the delusions of *mnophka*."

"It sounds very interesting," admitted Balcoth. "However, I've never tampered much with narcotics myself; though I did experiment once or twice, in my young, romantic days with *cannabis Indica*. I had been reading Gautier and Baudelaire, I suppose. Anyway, the result was rather disappointing."

"You didn't take it long

enough for your system to absorb a residuum of the drug, I imagine," said Manners. "Thus the effects were negligible, from a visionary standpoint. But plutonium is altogether different—you get the maximum result from the very first dose. I think it would interest you greatly, Balcoth, since you are a sculptor by profession: you would see some unusual plastic images, not easy to render in terms of Euclidean planes and angles. I'll gladly give you a pinch of it now, if you'd care to experiment."

"You're pretty generous, aren't you, since the stuff is so rare?"

"I'm not being generous at all. For years, I've planned to write a monograph on ultra-terrestrial alkaloids; and you might give me some valuable data. With your type of brain and your highly developed artistic sense, the visions of plutonium should be uncommonly clear and significant. All I ask is, that you describe them to me as fully as you can afterwards."

"Very well," agreed Balcoth. "I'll try anything once." His curiosity was somewhat inveigled, his imagination seduced, by Manners' account of the remarkable drug.

Manners brought out an antique whisky-glass, which he filled nearly to the rim with some golden-red liquid. Uncorking the vial of plutonium, he added to

this fluid a small pinch of the fine white powder, which dissolved immediately and without effervescence.

"The liquid is a wine made from a sweet Martian tuber known as *ovura*," he explained. "It is light and harmless, and will counteract the bitter taste of the plutonium. Drink it quickly and then lean back in your chair."

Balcoth hesitated, eyeing the golden-red fluid.

"Are you quite sure the effects will wear off as promptly as you say?" he questioned. "It's a quarter past nine now, and I'll have to leave about ten to keep an appointment with one of my patrons at the Belvedere Club. It's the billionaire, Claud Wishhaven, who wants me to do a bas-relief in pseudo-jade and neojasper for the hall of his country mansion. He wants something really advanced and futuristic. We're to talk it over to-night—decide on the motifs, etc."

"That gives you forty-five minutes," assured the doctor—"and in thirty, at the most, your brain and senses will be perfectly normal again. I've never known it to fail. You'll have fifteen minutes to spare, in which to tell me all about your sensations."

Balcoth emptied the little antique glass at a gulp and leaned back, as Manners had directed, on the deep pneumatic

cushions of the chair. He seemed to be falling easily but endlessly into a mist that had gathered in the room with unexplainable rapidity; and through this mist he was dimly aware that Manners had taken the empty glass from his relaxing fingers. He saw the face of Manners far above him, small and blurred, as if in some tremendous perspective of alpine distance; and the doctor's simple action seemed to be occurring in another world.

He continued to fall and float through eternal mist, in which all things were dissolved as in the primordial nebulae of chaos. After a timeless interval, the mist, which had been uniformly grey and hueless at first, took on a flowing iridescence, never the same for two successive moments; and the sense of gentle falling turned to a giddy revolution, as if he were caught in an ever-accelerating vortex.

Coincidentally with his movement in this whirlpool of prismatic splendor, he seemed to undergo an indescribable mutation of the senses. The whirling colors, by subtle, ceaseless gradations, became recognizable as solid forms. Emerging, as if by an act of creation, from the infinite chaos, they appeared to take their place in an equally infinite vista. The feeling of movement, through decrescent spirals, was resolved into absolute

immobility. Balcoth was no longer conscious of himself as a living organic body: he was an abstract eye, a discorporate center of visual awareness, stationed alone in space, and yet having an intimate relationship with the frozen prospect on which he peered from his ineffable vantage.

Without surprise, he found that he was gazing simultaneously in two directions. On either hand, for a vast distance that was wholly void of normal perspective, a weird and peculiar landscape stretched away, traversed by an unbroken frieze or bas-relief of human figures that ran like a straight undeviating wall.

For a while, the frieze was incomprehensible to Balcoth, and he could make nothing of its glacial, flowing outlines with their background of repeated masses and complicated angles and sections of other human friezes that approached or departed, often in a very abrupt manner, from an unseen world beyond. Then the vision seemed to resolve and clarify itself, and he began to understand.

The bas-relief, he saw, was composed entirely of a repetition of his own figure, plainly distinct as the separate waves of a stream, and possessing a stream-like unity. Immediately before him, and for some distance on either

hand, the figure was seated in a chair—the chair itself being subject to the same billowy repetition. The background was composed of the reduplicated figure of Dr. Manners, in another chair; and behind this, the manifold images of a medicine cabinet and a section of wall-panelling.

Following the vista on what, for lack of any better name, might be termed the left hand, Balcoth saw himself in the act of draining the antique glass, with Manners standing before him. Then, still further, he saw himself previous to this, with a background in which Manners was presenting him the glass, was preparing the dose of plutonium, was going to the cabinet for the vial, was rising from his pneumatic chair. Every movement, every attitude of the doctor and himself during their past conversation, was visioned in a sort of reverse order, reaching away, unalterable as a wall of stone sculpture, into the weird, eternal landscape. There was no break in the continuity of his own figure; but Manners seemed to disappear at times, as if into a fourth dimension. These times, he remembered later, were the occasions when the doctor had not been in his line of vision. The perception was wholly visual; and though Balcoth saw his own lips and those of Manners parted in movements of

speech, he could hear no word or other sound.

Perhaps the most singular feature of the vision was the utter absence of foreshortening. Though Balcoth seemed to behold it all from a fixed, immovable point, the landscape and the intersecting frieze presented themselves to him without diminution, maintaining a frontal fullness and distinctness to a distance that might have been many miles.

Continuing along the left-hand vista, he saw himself entering Manners' apartments, and then encountered his image standing in the elevator that had borne him to the ninth floor of the hundred story hotel in which Manners lived. Then the frieze appeared to have an open street for background, with a confused, ever-changing multitude of other faces and forms, of vehicles and sections of buildings, all jumbled together as in some old-time futuristic painting. Some of these details were full and clear, and others were cryptically broken and blurred, so as to be scarcely recognizable. Everything, whatever its spatial position and relation, was re-arranged in the flowing frozen stream of this temporal pattern.

Balcoth retraced the three blocks from Manners' hotel to his own studio, seeing all his past movements, whatever their

direction in tri-dimensional space, as a straight line in the time-dimension. At last he was in his studio; and there the frieze of his own figure receded into the eerie prospect of space-transmuted time among other friezes formed of actual sculptures. He beheld himself giving the final touches with his chisel to a symbolic statue at the afternoon's end, with a glare of ruddy sunset falling through an unseen window and flushing the pallid marble. Beyond this there was a reverse fading of the glow, a thickening and blurring of the half-chiselled features of the image, a female form to which he had given the tentative name of Oblivion. At length, among half-seen statuary, the left-hand vista became indistinct, and melted slowly in amorphous mist. He had seen his own life as a continuous glaciated stream, stretching for about five hours into the past.

Reaching away on the right hand, he saw the vista of the future. Here there was a continuation of his seated figure under the influence of the drug, opposite the continued bas-relief of Dr. Manners and the repeated cabinet and wall-panels. After a considerable interval, he beheld himself in the act of rising from the chair. Standing erect, he seemed to be talking awhile, as in some silent antique film, to

the listening doctor. After that, he was shaking hands with Manners, was leaving the apartment, was descending in the lift and following the open, brightly-lighted street toward the Belvedere Club where he was to keep his appointment with Claud Wishaven.

The Club was only three blocks away, on another street; and the shortest route, after the first block, was along a narrow alley between an office building and a warehouse. Balcoth had meant to take this alley; and in his vision, he saw the bas-relief of his future figure passing along the straight pavement with a background of deserted doorways and dim walls that towered from sight against the extinguished stars.

He seemed to be alone: there were no passers—only the silent, glimmering endlessly repeated angles of arc-lit walls and windows that accompanied his repeated figure. He saw himself following the alley, like a stream in some profound canyon; and there, mid-way, the strange vision came to an abrupt, inexplicable end, without the gradual blurring into formless mist, that had marked his retrospective view of the past.

The sculpture-like frieze with its architectural ground appeared to terminate, broken off clean and sharp, in a gulf to immeasur-

able blackness and nullity. The last wave-like duplication of his own person, the vague doorway beyond it, the glimmering alley-pavement, all were seen as if shorn asunder by a falling sword of darkness, leaving a vertical line of cleavage beyond which there was—nothing.

Balcoth had a feeling of utter detachment from himself, an *éloignement* from the stream of time, from the shores of space, in some abstract dimension. The experience, in its full realization, might have lasted for an instant only—or for eternity. Without wonder, without curiosity of reflection, like a fourth-dimensional Eye, he viewed simultaneously the unequal cross-sections of his own past and future.

After that timeless interval of complete perception, there began a reverse process of change. He, the all-seeing eye, aloof in super-space, was aware of movement, as if he were drawn back by some subtle thread of magnetism into the dungeon of time and from which he had momentarily departed. He seemed to be following the frieze of his own seated body toward the right, with a dimly felt rhythm or pulsation in his movement that corresponded to the merging duplications of the figure. With curious clearness, he realized that the time-unit by which these duplications were determined, was the beating of his own heart.

THE PLUTONIAN DRUG

Now, with accelerative swiftness, the vision of petrific form and space was re-dissolving into a spiral swirl of multitudinous colors, through which he was drawn upward. Presently he came to himself, seated in the pneumatic chair, with Dr. Manners opposite. The room seemed to waver a little, as if with some lingering touch of the weird transmutation; and webs of spinning iris hung in the corners of his eyes. Apart from this, the effect of the drug had wholly vanished, leaving, however, a singularly clear and vivid memory of the almost ineffable experience.

Dr. Manners began to question him at once, and Balcoth described his visionary sensations as fully and graphically as he could.

"There is one thing I don't understand," said Manners at the end with a puzzled frown. "According to your account, you must have seen five or six hours of the past, running in a straight spatial line, as a sort of continuous landscape; but the vista of the future ended sharply after you had followed it for three-quarters of an hour, or less. I've never known the drug to act so unequally: the past and future perspectives have always been about the same in their extent for others who have used plutonium."

"Well," observed Balcoth, "the real marvel is that I could see

into the future at all. In a way, I can understand the vision of the past. It was clearly composed of physical memories—of all my recent movements; and the background was formed of all the impressions my optic nerves had received during that time. But how could I behold something that hasn't yet happened?"

"There's the mystery, of course," assented Manners. "I can think of only one explanation at all intelligible to our finite minds. This is, that all the events which compose the stream of time have already happened, are happening, and will continue to happen forever. In our ordinary state of consciousness, we perceive with the physical senses merely that moment which we call the present. Under the influence of plutonium, you were able to extend the moment of present cognition in both directions, and to behold simultaneously a certain portion of that which is normally beyond perception. Thus appeared the vision of yourself as a continuous, immobile body, extending through the time-vista."

Balcoth, who had been standing, now took his leave. "I must be going," he said, "or I'll be late for my appointment."

"I won't detain you any longer," said Manners. He appeared to hesitate, and then added: "I'm still at a loss to com-

prehend the abrupt cleavage and termination of your prospect of the future. The alley in which it seemed to end was Falman Alley, I suppose—your shortest route to the Belvedere Club. If I were you, Balcoth, I'd take another route, even if it requires a few minutes extra."

"That sounds rather sinister," laughed Balcoth. "Do you think that something may happen to me in Falman Alley?"

"I hope not—but I can't guarantee that it won't." Manners' tone was oddly dry and severe. "You'd better do as I suggest."

Balcoth felt the touch of a momentary shadow as he left the hotel—a premonition brief and light as the passing of some night-bird on noiseless wings. What could it mean—that gulf of infinite blackness into which the weird frieze of his future had appeared to plunge, like a frozen cataract? Was there a menace of some sort that awaited him in a particular place, at a particular moment?

He had a curious feeling of repetition, of doing something that he had done before, as he followed the street. Reaching the entrance of Falman Alley, he took out his watch. By walking briskly and following the alley, he would reach the Belvedere Club punctually. But if he went on around the next block, he would be a little late. Balcoth

knew that his prospective patron, Claud Wishhaven, was almost a martinet in demanding punctuality from himself and from others. So he took the alley.

The place appeared to be entirely deserted, as in his vision. Midway, Balcoth approached the half-seen door—a rear entrance of the huge warehouse—which had formed the termination of the time prospect. The door was

his last visual impression, for something descended on his head at that moment, and his consciousness was blotted out by the supervening night he had provisioned. He had been sandbagged, very quietly and efficiently, by a twenty-first century thug. The blow was fatal; and time, as far as Balcoth was concerned, had come to an end.

THE END

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DISCUSSIONS

Dear Editor:

Have read the latest *Amazing Stories* and *Fantastic*. I enjoyed both more than I had for a number of years.

Please use more of the Paul covers and inside illustrations whenever possible. I hope you will reprint all the classics, long and short that appeared in the twenties and thirties. I have wanted to read Edmond Hamilton's "Universe Wreckers" and Charles R. Tanner's "Tumithak of the Corridors" for a long time but have never been able to. Also "Beast of the Island" by Alexander M. Phillips. As for *Fantastic*, how about Eando Binder's "Little People" stories and Adam Link? Also Manly Wade Wellman's Hok the Cave Man stories. Also reprints of Nelson S. Bond stories. And incidentally what happened to Bond? His is about the best there is, and I haven't seen a new story by him in a long time.

Ned Reece

1103 Rogers Lake Rd.
Kannapolis, N.C. 28081

● *Don't know if we can coax any new stories out of Bond, but watch for "The Priestess Who Rebelled," which many consider his best—coming up soon.—Editor.*

Dear Editor:

For quite some time we have been trying to contact Jerry Siegel, formerly of 50 Knightsbridge Rd., Great Neck, Long Island, New York. Mr. Siegel happens merely to be none other than "the writer with the \$100,000,000 brain"—the original creator, with Joe Schuster, of Superman.

We are in possession of Siegel's manuscript, "Miracles on Antares" (the origin of which is described in the June, 1958 issue of *Future Science Fiction Magazine*) and which Nicholas Diamond assures us is "eminently appropriate" for immediate motion-picture production

Must we call Superman personally, in

order to locate his own creator? Can readers of *Amazing Stories* help?

G. Bernard Kantor
Ries-Kantor Promotions
533 W. 112th Street
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● *Anyone out there know where Mr. Kantor can find the man who helped make the Man of Steel even more famous than Phil Nowlan's Buck Rogers?—Editor.*

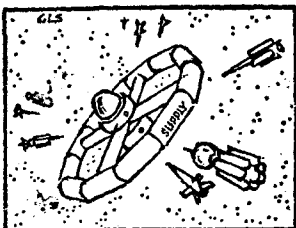
Dear Editor:

It certainly is a pleasure to encounter good imaginative s-f in the old-time tradition after grappling with the obscure and often affected themes of your competitors. I gather that *Amazing Stories* is in the process of being revitalized, and I congratulate you on your efforts to bring back many earlier stories by today's leading s-f writers. How about more information on the author and the original publication date of these older tales,—and stick with the authentic illustrations, they lend something to the nostalgia of these classics.

In addition, I would suggest that you have at least one short article in each issue of *Amazing* dealing with some aspect of s-f literature in general. Leave straight science articles to their appropriate journals. It might be of interest to provide a short biography on a particular s-f author, or provide an analysis of various recurring themes in s-f (time travel, alien societies, etc.), or perhaps some data on early s-f magazines in this country.

Warrick C. Robinson
Box 89, Cove Rd.
Oyster Bay, N.Y.

● *Enough good suggestions here to keep us busy for a month of Sundays, but right now we're working hard on one you didn't mention: the BIG 40th Anniversary Issue of *Amazing*—coming up next time!—Editor.*



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